

APPENDIX

KARTU KONSULTASI TUGAS AKHIR

Nama Mahasiswa : Yusron A. Rabbani Pembimbing I : Yenny Nurchasanah, ST.,MT.

Nomor Induk : D 100 110 029 **Pembimbing II : Budi Setiawan, ST., MT.**

NIRM : Tgl. Dimulai :

Jurusan/Progdi : Teknik Sipil Tgl. Selesai :

Judul/Topik : Perencanaan Gedung Hotel 6 Lantai + 1 *Basement* Menggunakan Sistem

Rangka Pemikul Moment Menengah Di Surakarta

NO.	TANGGAL	MATERI KONSULTASI	T. TANGAN*
1	12/1/2004	Prof/ Dipulita	77
2	13/1/2004	Prof/ Dipulita	77
3	17/1/2004	Ag. Gendutan max dar	77
4	22/1/2004	Ag. 2 bus 3 ss	77
5	26/1/2004	Ag. 2 bus 3 ss	77
6	29/1/2004	Ag. 2 bus 3 ss	77
7	31/1/2004	Ag. 2 bus 3 ss	77

Catatan : - Harap dibawa setiap konsultasi

* Pembimbing Tugas Akhir

Mengetahui :

Ketjur

Surakarta, _____

Mahasiswa



UNIVERSITAS MUHAMMADIYAH SURAKARTA

FAKULTAS TEKNIK

Jl. A. Yani Pabelan Kartasura Tromol Pos 1 Telp. (0271) 717417 Psw. 213 Fax. (0271) 715448 Surakarta - 57102

KARTU KONSULTASI TUGAS AKHIR

Nama Mahasiswa : Yusron A. Rabbani Pembimbing I : Yenny Nurchasanah, ST., MT.
Nomor Induk : D 100 110 029 Pembimbing II : Budi Setiawan, ST., MT.
NIRM : Tgl. Dimulai :
Jurusan/Progdi : Teknik Sipil Tgl. Selesai :
Judul/Topik : Perencanaan Gedung Hotel 6 Lantai dan 1 Basement Menggunakan Sistem Rangka Pemikul Moment Menengah Di Surakarta

NO.	TANGGAL	MATERI KONSULTASI	T. TANGAN*
8	12/5 2016	Revisi & full basement di 2 lantai lain 100m jarak dari portal	
9	14/5 2016	Survei lapangan. Perencanaan gambar detail dari struktur umum	
10	18/5 2016	Uraian & struktur ke P1	
11	1 Juni 2016	- Konsep dasar perencanaan Blok sbg. Blok kantor. → efektifitas penggunaan lahan menampung sebelum penggunaan skematik yg benar.	

Catatan : - Harap dibawa setiap konsultasi

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Judul/Topik : Perencanaan Gedung Hotel 6 Lantai dan 1 Basement Menggunakan Sistem Rangka Pemikul Moment Menengah Di Surakarta

NO.	TANGGAL	MATERI KONSULTASI	T. TANGAN*
		* Rangk → pelengkap laporan. → penutupan masalah Seminar final	St.
	15/6/16	- perbaikan jml tml perbaikan - ACC y ke pembimbing	St.
	6/8/16	Rangk tml	St.
	16 April 16	- Rangk Acc.	St.

Catatan : - Harap dibawa setiap konsultasi

* Pembimbing Tugas Akhir

Mengetahui :

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Mahasiswa

Attachment VIII.1. Calculation of moments need to beam combination as-4 due to load combination

Floor	Beam No	Beam position	Beam moment (kNm)				Load Combination (kNm)										
			M ₀	M _L	M _{E_x}	M _{E_y}	1,4M ₀	1,2M ₀ +1,6M _L	1,2M ₀ +1M _L +1M _E		1,2M ₀ +1M _L -1M _E		0,9M ₀ +1M _E		0,9M ₀ -1M _E		
									(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	
1st floor	5	Left support	-77.423	-28.572	87.023	-77.841	-108.392	-138.623	-57.809	-173.214	-185.150	-69.745	-6.010	-121.415	-133.351	-17.946	
		Field	48.513	18.349	0.979	-1.088	67.918	87.573	77.217	75.770	75.911	77.359	44.315	42.868	43.009	44.456	
	19	Right support	-69.691	-24.914	86.489	-97.018	-97.568	-123.492	-51.160	-179.615	-165.927	-37.472	-5.339	-133.793	-120.106	8.349	
		Left support	-69.686	-24.914	94.400	-84.301	-97.560	-123.485	-39.427	-164.518	-177.646	-52.556	6.393	-118.698	-131.827	-6.736	
	22	Field	48.197	18.228	3.131	-2.682	67.475	87.000	78.390	74.321	73.738	77.807	45.703	41.634	41.051	45.120	
		Right support	-77.429	-28.572	84.520	-94.953	-108.400	-138.630	-65.453	-191.084	-177.520	-51.890	-13.652	-139.283	-125.720	-0.089	
	23	Left support	-83.227	-33.704	81.502	-91.154	-116.517	-153.798	-79.420	-200.278	-187.731	-66.872	-20.748	-141.607	-129.060	-8.201	
		Field	49.405	20.665	0.062	-0.050	69.167	92.349	79.998	79.919	79.904	79.982	44.512	44.433	44.418	44.496	
	25	Right support	-81.686	-33.224	85.148	-76.428	-114.360	-151.182	-69.028	-182.131	-193.466	-80.363	-11.298	-124.401	-135.736	-22.633	
		Left support	-84.393	-34.674	84.643	-76.361	-118.150	-156.750	-74.211	-186.914	-197.680	-84.977	-14.219	-126.922	-137.688	-24.985	
	27	Field	53.021	22.327	1.712	-1.440	74.230	99.349	87.232	85.026	84.673	86.880	48.999	46.792	46.440	48.646	
		Right support	-81.330	-33.281	78.944	-87.895	-113.861	-150.845	-78.301	-195.088	-183.453	-66.665	-20.621	-137.408	-125.773	-8.985	
	29	Left support	-81.692	-33.224	81.240	-90.923	-114.368	-151.189	-77.292	-197.805	-185.217	-64.703	-19.560	-140.073	-127.485	-6.971	
		Field	49.404	20.662	0.294	-0.242	69.166	92.344	80.169	79.794	79.725	80.100	44.686	44.311	44.242	44.617	
	34	Right support	-83.221	-33.704	85.609	-76.766	-116.509	-153.790	-70.989	-184.651	-196.147	-82.485	-12.319	-125.981	-137.478	-23.815	
		Left support	-84.399	-34.674	81.373	-90.694	-118.159	-156.757	-81.788	-202.235	-190.117	-69.671	-21.795	-142.241	-130.123	-9.677	
	2nd floor	29	Field	53.021	22.327	0.900	-0.997	74.230	99.349	86.553	85.226	85.352	86.679	48.320	46.993	47.119	48.446
			Right support	-81.323	-33.281	81.794	-73.851	-113.852	-150.838	-71.230	-180.182	-190.508	-81.556	-13.552	-122.504	-132.830	-23.878
		34	Left support	-78.345	-34.300	80.645	-73.283	-109.683	-148.894	-69.654	-177.403	-186.974	-79.225	-11.850	-119.600	-129.171	-21.421
			Field	53.520	23.889	0.700	-0.573	74.928	102.446	88.641	87.749	87.584	88.476	48.696	47.805	47.640	48.531
		43	Right support	-78.351	-34.300	79.188	-87.817	-109.692	-148.902	-75.479	-192.382	-181.165	-64.261	-17.673	-134.577	-123.359	-6.456
			Left support	-16.756	-6.830	126.539	-143.811	-23.458	-31.034	56.459	-132.786	-110.332	78.913	68.315	-120.930	-98.476	90.769
		49	Field	-4.551	-2.319	2.195	-1.909	-6.371	-9.172	-6.157	-9.030	-9.403	-6.530	-2.473	-5.346	-5.718	-2.845
			Right support	-18.120	-7.082	139.133	-122.475	-25.369	-33.075	73.564	-109.562	-131.216	51.909	86.082	-97.044	-118.699	64.427
55		Left support	-16.749	-6.830	139.145	-122.527	-23.448	-31.026	75.459	-107.711	-129.315	53.855	87.313	-95.857	-117.461	65.709	
		Field	-4.551	-2.319	0.210	-0.239	-6.371	-9.172	-7.642	-7.956	-7.918	-7.604	-3.957	-4.271	-4.234	-3.920	
3rd floor		195	Right support	-18.128	-7.082	126.778	-144.131	-25.379	-33.084	54.704	-134.932	-112.373	77.263	67.224	-122.412	-99.853	89.783
			Left support	-72.161	-26.316	96.607	-89.505	-101.025	-128.699	-43.154	-173.431	-182.665	-52.387	4.811	-125.467	-134.700	-4.422
		209	Field	47.995	18.172	1.226	-1.330	67.193	86.669	76.593	74.804	74.939	76.729	44.023	42.233	42.369	44.158
			Right support	-75.889	-27.491	97.415	-105.116	-106.245	-135.053	-52.679	-194.450	-184.438	-42.666	-2.420	-144.192	-134.180	7.592
		212	Left support	-75.878	-27.491	103.497	-95.842	-106.229	-135.040	-43.800	-183.338	-193.290	-53.753	6.455	-133.083	-143.035	-3.498
			Field	47.679	18.049	2.503	-2.257	66.751	86.094	77.091	73.758	73.438	76.771	44.738	41.405	41.085	44.418
		217	Right support	-72.172	-26.316	95.402	-102.909	-101.041	-128.712	-48.393	-187.210	-177.452	-38.634	-0.425	-139.243	-129.484	9.333
			Left support	-83.334	-33.434	93.604	-100.934	-116.668	-153.495	-70.111	-206.287	-196.758	-60.582	-11.677	-147.853	-138.324	-2.148
		224	Field	49.589	20.724	0.104	-0.141	69.424	92.664	80.292	80.121	80.168	80.339	44.692	44.521	44.568	44.739
			Right support	-80.972	-33.271	96.310	-89.226	-113.361	-150.400	-60.895	-190.770	-199.980	-70.105	-3.332	-133.208	-142.417	-12.542
		233	Left support	-81.219	-33.425	98.147	-90.987	-113.707	-150.943	-60.037	-192.431	-201.738	-69.345	-2.247	-134.640	-143.948	-11.554
			Field	52.567	22.127	0.834	-0.675	73.594	98.484	85.839	84.783	84.576	85.632	47.942	46.886	46.679	47.735
		239	Right support	-85.228	-34.838	93.062	-100.377	-119.319	-158.013	-74.162	-209.569	-200.060	-64.653	-13.756	-149.163	-139.654	-4.247
			Left support	-80.983	-33.271	93.446	-100.844	-113.376	-150.414	-67.258	-203.261	-193.643	-57.640	-9.692	-145.695	-136.077	-0.074
	244	Field	49.587	20.720	0.188	-0.207	69.422	92.656	80.350	80.074	80.098	80.375	44.754	44.478	44.502	44.779	
		Right support	-83.322	-33.434	96.340	-89.267	-116.651	-153.481	-63.861	-193.786	-202.981	-73.056	-5.430	-135.355	-144.550	-14.625	
	254	Left support	-81.231	-33.425	95.143	-102.644	-113.723	-150.957	-66.552	-205.003	-195.251	-66.801	-8.758	-147.208	-137.457	0.993	
		Field	52.567	22.127	1.045	-1.122	73.594	98.483	85.915	84.399	84.500	86.016	48.018	46.502	46.603	48.119	
	264	Right support	-85.216	-34.838	95.819	-88.839	-119.302	-157.999	-67.929	-197.190	-206.263	-77.003	-7.527	-136.788	-145.861	-16.601	
		Left support	-79.228	-34.680	97.472	-90.395	-110.919	-150.562	-59.400	-190.908	-200.108	-68.600	-0.952	-132.459	-141.659	-10.152	
	274	Field	52.795	23.571	0.188	-0.193	73.914	101.068	87.055	86.788	86.796	87.062	47.645	47.379	47.386	47.653	
		Right support	-79.241	-34.680	94.951	-102.396	-110.937	-150.577	-65.537	-203.680	-194.001	-55.858	-7.085	-145.228	-135.548	2.595	
	284	Left support	-14.638	-6.296	137.827	-148.946	-20.493	-27.639	69.282	-131.459	-117.004	83.737	79.970	-120.771	-106.317	94.424	
		Field	-2.972	-1.607	2.177	-1.999	-4.161	-6.137	-3.596	-6.519	-6.751	-3.828	-1.097	-4.020	-4.253	-1.329	
294	Right support	-16.973	-6.150	144.300	-133.516	-23.762	-30.208	77.727	-116.743	-130.763	63.708	88.970	-105.501	-119.521	74.950		
	Left support	-14.624	-6.296	144.563	-133.755	-20.473	-27.622	80.592	-114.231	-128.282	66.541	91.275	-103.547	-117.598	77.224		
4th floor	304	Field	-2.972	-1.607	0.056	-0.062	-4.161	-6.137	-5.136	-5.218	-5.128	-5.128	-2.638	-2.720	-2.712	-2.630	
		Right support	-16.987	-6.150	137.760	-148.873	-23.781	-30.225	66.564	-134.079	-119.632	81.010	77.810	-122.833	-108.386	92.257	
	314	Left support	-68.651	-24.845	92.895	-86.584	-96.112	-122.133	-40.306	-165.941	-174.146	-48.511	5.134	-120.501	-128.706	-3.071	
		Field	48.133	18.215	1.787	-1.944	67.386	86.903	77.178	74.567	74.771	77.382	44.523	41.912	42.116	44.727	
	324	Right support	-79.150	-28.898	92.617	-99.292	-110.810	-141.217	-61.049	-195.385	-186.708	-52.372	-8.406	-142.742	-134.064	0.271	
		Left support	-79.135	-28.898	99.107	-92.329	-110.789	-141.199	-52.452	-186.457	-195.269	-61.264	0.187	-133.818	-142.630	-8.625	
	334	Field	47.822	18.094	1.662	-1.603	66.950	86.335	76.661	74.375	74.298	76.583	44.221	41.935	41.858	44.143	
		Right support	-68.666	-24.845	90.000	-96.449	-96.133	-122.151	-46.179	-176.694	-168.310	-37.795	-0.734	-131.249	-122.865	7.650	
	344	Left support	-83.716	-33.328	89.577	-95.957	-117.203	-153.784	-72.998	-202.871	-194.577	-64.704	-14.555	-144.428	-136.135	-6.261	
		Field	49.704	20.772	0.445	-0.518	69.585	92.880	80.706	80.032	80.127	80.801	45.023	44.349	44.444	45.118	
	354	Right support	-80.405	-33.294	93.430	-87.093	-112.566	-149.755	-62.477	-188.843	-197.081	-70.715	-5.062	-131.428	-139.666	-1	

4th floor	565	Left support	-65.743	-23.675	83.366	-77.961	-92.040	-116.772	-42.589	-155.518	-162.545	-49.616	0.809	-112.120	-119.147	-6.218
		Field	48.123	18.216	2.134	-2.346	67.372	86.893	77.394	74.257	74.533	77.669	44.741	41.605	41.880	45.017
	Right support	-82.058	-30.072	81.818	-87.325	-114.882	-146.585	-72.922	-191.322	-184.162	-65.762	-18.233	-136.633	-129.472	-11.072	
	Left support	-82.040	-30.072	88.435	-82.675	-114.856	-146.563	-64.887	-184.664	-192.153	-72.375	-10.203	-129.980	-137.469	-17.692	
	Field	47.814	18.095	0.919	-0.929	66.940	86.329	76.113	74.819	74.831	76.125	43.674	42.380	42.392	43.686	
	Right support	-65.761	-23.675	78.992	-84.297	-92.066	-116.794	-48.886	-163.189	-156.292	-41.989	-5.482	-119.785	-112.888	1.414	
	Left support	-84.097	-33.233	79.953	-85.287	-117.735	-154.089	-79.782	-195.450	-188.516	-72.848	-21.320	-136.998	-130.054	-14.386	
	Field	49.803	20.810	0.690	-0.784	69.724	93.059	81.028	79.996	80.118	81.150	45.278	44.246	44.368	45.399	
	Right support	-79.795	-33.307	84.679	-79.240	-111.713	-149.045	-68.154	-182.897	-189.968	-75.224	-10.909	-125.652	-132.722	-17.979	
	Left support	-77.398	-32.018	89.084	-83.414	-108.357	-144.107	-60.837	-181.586	-188.955	-68.207	-5.599	-126.348	-133.718	-12.969	
	Field	52.582	22.139	0.891	-0.933	73.614	98.520	85.847	84.571	84.626	85.902	47.934	46.658	46.713	47.989	
	Right support	-88.819	-36.124	82.416	-88.025	-124.346	-164.381	-86.699	-206.007	-198.714	-79.406	-23.929	-143.238	-135.945	-16.636	
5th floor	585	Left support	-79.815	-33.307	79.701	-85.149	-111.741	-149.068	-74.928	-190.323	-183.241	-67.846	-17.677	-133.072	-125.990	-10.595
		Field	49.800	20.805	0.992	-1.064	69.720	93.049	81.239	79.799	79.892	81.332	45.494	44.054	44.147	45.586
	Right support	-84.077	-33.233	84.266	-78.857	-117.708	-154.065	-73.516	-187.702	-194.734	-80.549	-15.060	-129.246	-136.278	-22.093	
	Left support	-77.419	-32.018	83.555	-89.244	-108.386	-144.132	-68.139	-189.099	-181.702	-60.743	-12.895	-133.855	-126.458	-5.499	
	Field	52.581	22.139	1.336	-1.427	73.614	98.520	86.145	84.211	84.328	86.262	48.231	46.297	46.415	48.349	
	Right support	-88.798	-36.124	87.352	-81.774	-124.317	-164.356	-79.861	-198.250	-205.501	-87.113	-17.098	-135.487	-142.738	-24.349	
	Left support	-79.142	-34.616	92.066	-86.186	-110.799	-150.356	-63.377	-188.153	-195.796	-71.020	-5.018	-129.794	-137.438	-12.661	
	Field	52.849	23.629	1.271	-1.356	73.989	101.226	87.913	86.074	86.184	88.023	48.429	46.590	46.700	48.538	
	Right support	-79.164	-34.616	86.421	-92.305	-110.829	-150.382	-70.883	-195.991	-188.342	-63.234	-12.518	-137.626	-129.977	-4.869	
	Left support	-14.296	-6.582	101.396	-108.311	-20.015	-27.687	45.165	-101.630	-92.641	54.155	56.037	-90.759	-81.770	65.026	
	Field	-3.410	-1.806	1.465	-1.374	-4.773	-6.981	-4.844	-6.832	-6.950	-4.963	-2.016	-4.003	-4.122	-2.134	
	Right support	-18.114	-6.244	105.213	-98.487	-25.360	-31.727	47.687	-94.904	-103.648	38.942	59.365	-83.226	-91.970	50.620	
6th floor	594	Left support	-14.273	-6.582	105.810	-99.037	-19.982	-27.659	52.389	-91.004	-99.809	43.584	63.253	-80.140	-88.944	54.448
		Field	-3.410	-1.806	0.173	-0.167	-4.774	-6.981	-5.774	-6.012	-5.783	-2.945	-3.184	-3.192	-2.954	-2.954
	Right support	-18.137	-6.244	101.175	-108.077	-25.392	-31.754	40.743	-105.733	-96.760	49.717	52.428	-94.048	-85.075	61.402	
	Left support	-63.658	-22.833	67.940	-63.760	-89.121	-112.922	-50.410	-142.600	-148.034	-55.844	-8.480	-100.670	-106.104	-13.913	
	598	Field	48.127	18.185	2.329	-2.606	67.378	86.847	77.484	74.029	74.390	77.844	44.861	41.407	41.767	45.222
		Right support	-84.174	-30.981	65.226	-69.185	-117.844	-150.578	-87.519	-181.607	-176.461	-82.373	-31.286	-125.373	-120.228	-26.140
	Left support	-84.152	-30.981	71.540	-67.140	-117.813	-150.552	-80.566	-177.642	-183.361	-86.285	-24.339	-121.415	-127.135	-30.059	
	Field	47.821	18.064	0.213	-0.220	66.950	86.287	75.596	75.293	75.302	75.605	43.186	42.883	42.892	43.195	
	Right support	-63.679	-22.833	62.370	-66.141	-89.150	-112.948	-56.719	-146.677	-141.776	-51.818	-14.783	-104.740	-99.839	-9.881	
	Left support	-84.573	-33.159	64.508	-68.411	-118.403	-154.542	-90.662	-183.706	-178.632	-85.588	-32.131	-125.175	-120.101	-27.057	
	Field	49.894	20.843	0.803	-0.938	69.852	93.222	81.238	80.019	80.195	81.414	45.426	44.207	44.383	45.602	
	Right support	-79.171	-33.302	69.916	-65.690	-110.840	-148.289	-78.098	-173.022	-178.517	-83.593	-21.045	-115.969	-121.464	-26.540	
Left support	-76.268	-31.591	74.944	-70.474	-106.775	-142.066	-69.310	-171.103	-176.914	-75.121	-14.839	-116.632	-122.443	-20.650		
7th floor	599	Field	52.617	22.118	1.552	-1.640	73.664	98.529	86.318	84.084	84.198	86.432	48.415	46.181	46.295	48.529
		Right support	-89.835	-36.564	68.180	-72.496	-125.768	-166.304	-97.935	-196.408	-190.796	-92.323	-34.420	-132.893	-127.282	-28.809
	Left support	-79.194	-33.302	64.273	-68.305	-110.871	-148.316	-84.553	-177.358	-172.116	-79.311	-27.493	-120.298	-115.056	-22.251	
	Field	49.893	20.839	1.303	-1.412	69.850	93.213	81.589	79.689	79.830	81.730	45.783	43.883	44.024	45.924	
	Right support	-84.551	-33.159	69.206	-65.029	-118.372	-154.515	-84.923	-178.888	-184.318	-90.353	-26.399	-120.364	-125.793	-31.828	
	Left support	-76.291	-31.591	68.601	-72.926	-106.807	-142.094	-76.416	-175.485	-169.863	-70.794	-21.938	-121.007	-115.385	-16.316	
	Field	52.617	22.118	1.290	-1.379	73.663	98.529	86.134	84.266	84.382	86.250	48.231	46.363	46.479	48.347	
	Right support	-89.811	-36.564	73.766	-69.340	-125.735	-166.275	-91.373	-191.547	-197.301	-97.127	-27.865	-128.039	-133.794	-33.620	
	Left support	-79.033	-34.641	79.504	-74.719	-110.646	-150.266	-72.392	-180.348	-186.570	-78.614	-14.041	-121.997	-128.219	-20.263	
	Field	52.954	23.606	1.686	-1.798	74.135	101.314	88.297	85.858	86.004	88.443	48.805	46.366	46.512	48.951	
	Right support	-79.058	-34.641	72.755	-77.382	-110.681	-150.296	-79.970	-185.067	-179.052	-73.955	-21.612	-126.708	-120.693	-15.597	
	Left support	-14.419	-6.578	72.338	-76.742	-20.186	-27.826	25.435	-78.920	-73.195	31.160	36.338	-68.017	-62.292	42.064	
8th floor	603	Field	-3.730	-1.778	0.942	-0.891	-5.223	-7.322	-5.580	-6.863	-6.930	-5.646	-2.682	-3.966	-4.032	-2.749
		Right support	-18.620	-6.185	74.730	-70.432	-26.068	-32.240	25.071	-76.542	-82.129	19.484	36.842	-64.771	-70.358	31.255
	Left support	-14.393	-6.578	75.491	-71.135	-20.150	-27.796	30.301	-72.337	-77.999	24.639	41.196	-61.442	-67.104	35.535	
	Field	-3.731	-1.778	0.295	-0.280	-5.223	-7.322	-6.044	-6.446	-6.466	-6.064	-3.146	-3.549	-3.568	-3.166	
	Right support	-18.645	-6.185	72.026	-76.417	-26.104	-32.271	20.541	-83.369	-77.661	26.249	32.320	-71.590	-65.882	38.028	
	Left support	-62.173	-22.598	47.685	-45.034	-87.043	-110.765	-63.031	-127.934	-131.381	-66.478	-21.781	-86.684	-90.131	-25.228	
	Field	48.188	18.332	2.472	-2.722	67.463	87.156	77.812	74.176	74.502	78.138	45.024	41.388	41.714	45.350	
	Right support	-85.189	-30.888	43.395	-45.644	-119.265	-151.647	-103.413	-165.740	-162.816	-100.489	-46.969	-109.296	-106.372	-44.045	
	Left support	-85.169	-30.888	49.345	-46.594	-119.237	-151.623	-97.724	-164.881	-168.458	-101.300	-41.285	-108.443	-112.019	-44.862	
	Field	47.884	18.213	0.778	-0.992	67.037	86.601	76.153	74.915	75.193	76.432	43.576	42.337	42.615	43.854	
	Right support	-62.193	-22.598	40.791	-42.882	-87.070	-110.789	-69.303	-127.874	-125.156	-66.585	-28.047	-86.618	-83.900	-25.329	
	Left support	-85.037	-33.224	45.528	-47.857	-119.051	-155.201	-104.096	-169.466	-166.438	-101.069	-45.362	-110.731	-107.704	-42.334	
Field	49.820	20.827	1.226	-1.378	69.749	93.107	81.424	79.601	79.799	81.622	45.651	43.828	44.026	45.849		
Right support	-78.583	-33.288	50.971	-48.203	-110.016	-147.560	-91.077	-160.499	-164.097	-94.676	-34.215	-103.636	-107.234	-37.813		
Left support	-74.813	-31.351	57.225	-54.119	-104.738	-139.936	-80.136	-158.077	-162.115	-84.174	-26.342	-104.283	-108.321	-30.380		
9th floor	606	Field	52.319	22.196	1.983	-2.125	73.246	98.296	86.324	83.449	83.633	86.509	48.432	45.557	45.742	48.617
		Right support	-91.702	-36.631	50.009	-52.801	-128.383	-168.652	-112.505	-184.472	-180.843	-108.875	-48.363	-120.330	-116.701	-44.734
	Left support	-78.606	-33.288	44.586	-47.034	-110.048	-147.588</									

Roof floor	1134	Left support	-80.330	-18.089	32.250	-30.591	-112.462	-125.339	-91.412	-135.401	-137.557	-93.569	-49.224	-93.213	-95.369	-51.380
		Field	43.028	7.106	1.176	-1.401	60.239	63.002	59.495	57.691	57.983	59.787	39.481	37.677	37.969	39.772
	1137	Right support	-54.478	-3.939	24.171	-24.945	-76.269	-71.676	-52.625	-87.007	-86.000	-51.619	-32.343	-66.724	-65.718	-31.337
		Left support	-72.233	-12.719	24.409	-25.402	-101.126	-107.030	-82.610	-117.478	-116.187	-81.319	-48.221	-83.089	-81.798	-46.930
	1138	Field	42.837	8.640	0.276	-0.389	59.971	65.228	60.204	59.738	59.885	60.350	38.713	38.247	38.394	38.859
		Right support	-64.542	-13.374	33.080	-31.440	-90.358	-98.848	-67.176	-112.340	-114.471	-69.307	-34.440	-79.604	-81.735	-36.571
	1140	Left support	-64.625	-10.535	36.385	-34.498	-90.475	-94.406	-62.049	-111.667	-114.121	-64.503	-32.127	-81.745	-84.198	-34.580
		Field	45.849	8.953	3.467	-3.674	64.189	69.344	66.337	61.339	61.607	66.606	43.629	38.631	38.899	43.898
	1142	Right support	-72.239	-16.409	31.238	-32.922	-101.135	-112.941	-81.734	-126.647	-124.458	-79.545	-43.654	-88.566	-86.377	-41.465
		Left support	-64.578	-13.374	26.298	-27.458	-90.409	-98.891	-72.806	-110.435	-108.927	-71.298	-40.059	-77.689	-76.180	-38.551
	1149	Field	42.857	8.638	2.679	-2.869	60.000	65.250	61.885	58.001	58.249	62.133	40.390	36.506	36.754	40.637
		Right support	-72.207	-12.719	29.926	-28.402	-101.090	-106.999	-77.962	-118.791	-120.774	-79.944	-43.581	-84.410	-86.393	-45.563
	1158	Left support	-64.646	-10.535	28.710	-30.183	-90.504	-94.431	-68.455	-109.680	-107.764	-66.539	-38.526	-79.751	-77.836	-36.611
		Field	45.850	8.953	0.572	-0.592	64.189	69.345	64.367	63.553	63.579	64.393	41.659	40.845	40.871	41.685
	1346	Right support	-72.218	-16.409	37.990	-35.986	-101.105	-112.916	-75.876	-127.659	-130.264	-78.481	-37.802	-89.585	-92.190	-40.407
		Left support	-67.278	-13.545	45.532	-43.038	-94.189	-102.405	-61.657	-123.656	-126.898	-64.900	-27.929	-89.928	-93.170	-31.172
	1144	Field	49.540	9.764	2.502	-2.674	69.355	75.070	70.912	67.289	67.511	71.134	46.286	42.663	42.885	46.508
		Right support	-67.302	-13.545	36.908	-38.951	-94.222	-102.433	-69.083	-122.185	-119.530	-66.428	-35.348	-88.450	-85.794	-32.693
	1158	Left support	-80.374	-18.089	27.051	-27.989	-112.524	-125.392	-95.884	-134.412	-133.193	-94.665	-53.682	-92.210	-90.991	-52.463
		Field	43.027	7.106	2.466	-2.817	60.238	63.002	60.359	56.661	57.117	60.816	40.345	36.647	37.103	40.802
	1144	Right support	-54.438	-3.939	31.777	-30.100	-76.213	-71.628	-46.517	-89.832	-92.011	-48.697	-26.247	-69.561	-71.741	-28.427
		Left support	-19.538	-4.018	5.038	-4.709	-27.353	-29.874	-23.838	-30.660	-31.089	-24.266	-13.958	-20.781	-21.209	-14.387
	1158	Field	-9.681	-1.652	0.345	-0.383	-13.553	-14.260	-13.038	-13.548	-13.499	-12.990	-8.482	-8.991	-8.943	-8.434
		Right support	-23.221	-2.976	4.916	-5.211	-32.509	-32.627	-27.488	-34.578	-34.195	-27.105	-17.546	-24.635	-24.252	-17.163
	11	Left support	-19.517	-4.018	6.392	-6.597	-27.324	-29.849	-23.026	-32.118	-31.851	-22.759	-13.152	-22.245	-21.978	-12.886
		Field	-9.681	-1.652	1.124	-1.057	-13.553	-14.260	-12.462	-13.988	-14.075	-12.549	-7.906	-9.432	-9.519	-7.993
	13	Right support	-23.241	-2.976	3.597	-3.304	-32.538	-32.652	-28.260	-33.091	-33.472	-28.641	-18.311	-23.142	-23.523	-18.692
		Left support	-50.614	-12.180	21.094	-21.851	-70.860	-80.224	-58.378	-88.439	-87.456	-57.394	-31.014	-61.075	-60.092	-30.030
	11	Field	22.330	3.606	0.648	-0.642	31.262	32.565	30.857	29.954	29.947	30.849	20.552	19.650	19.642	20.544
		Right support	-13.286	2.314	21.874	-21.017	-18.601	-12.241	1.939	-28.085	-29.198	0.826	3.611	-26.413	-27.526	2.498
	13	Left support	-13.346	2.314	21.570	-22.373	-18.685	-12.313	1.157	-29.604	-28.560	2.201	2.847	-27.914	-26.870	3.891
		Field	22.318	3.602	0.165	-0.200	31.245	32.545	30.489	30.233	30.278	30.534	20.191	19.936	19.981	20.237
		Right support	-50.554	-12.180	21.366	-20.505	-70.775	-80.152	-57.630	-86.939	-88.059	-58.749	-30.284	-59.593	-60.713	-31.404

Attachment VIII.2. Calculation of longitudinal reinforcement and beam design moment as-4

Floor	Beam No	Beam position	Beam Dimension		Moment need (M_u)		Reinforcement		Moment desain (M_d)	
			b	h	$M_u^{(-)}$	$M_u^{(+)}$	Above	Under	$M_d^{(-)}$	$M_d^{(+)}$
			(mm)	(mm)	(kNm)	(kNm)	n.Dx	n.Dx	(kNm)	(kNm)
1st floor	5	Left support	300	500	185.150	61.717	4D22	2D22	219.622	138.117
		Field	300	500	37.030	87.573	2D22	2D22	133.229	133.229
		Right support	300	500	179.615	59.872	4D22	2D22	219.622	138.117
	19	Left support	300	500	177.646	59.215	4D22	2D22	219.622	138.117
		Field	300	500	38.217	87.000	2D22	2D22	133.229	133.229
		Right support	300	500	191.084	63.695	4D22	2D22	219.622	138.117
	22	Left support	300	500	200.278	66.759	4D22	2D22	219.622	138.117
		Field	300	500	40.056	92.349	2D22	2D22	133.229	133.229
		Right support	300	500	193.466	64.489	4D22	2D22	219.622	138.117
	23	Left support	300	500	197.680	65.893	4D22	2D22	219.622	138.117
		Field	300	500	39.536	99.349	2D22	2D22	133.229	133.229
		Right support	300	500	195.088	65.029	4D22	2D22	219.622	138.117
	25	Left support	300	500	197.805	65.935	4D22	2D22	219.622	138.117
		Field	300	500	39.561	92.344	2D22	2D22	133.229	133.229
		Right support	300	500	196.147	65.382	4D22	2D22	219.622	138.117
	27	Left support	300	500	202.235	67.412	4D22	2D22	219.622	138.117
		Field	300	500	40.447	99.349	2D22	2D22	133.229	133.229
		Right support	300	500	190.508	63.503	4D22	2D22	219.622	138.117
	34	Left support	300	500	186.974	62.325	4D22	2D22	219.622	138.117
		Field	300	500	38.476	102.446	2D22	2D22	133.229	133.229
		Right support	300	500	192.382	64.127	4D22	2D22	219.622	138.117
	29	Left support	300	500	132.786	90.769	3D22	2D22	167.895	136.194
		Field	300	500	26.557	26.557	2D22	2D22	133.229	133.229
		Right support	300	500	131.216	86.082	3D22	2D22	167.895	136.194
	43	Left support	300	500	129.315	87.313	3D22	2D22	167.895	136.194
		Field	300	500	26.986	26.986	2D22	2D22	133.229	133.229
		Right support	300	500	134.932	89.783	3D22	2D22	167.895	136.194
2nd floor	195	Left support	300	500	182.665	60.888	4D22	2D22	219.622	138.117
		Field	300	500	38.890	86.669	2D22	2D22	133.229	133.229
		Right support	300	500	194.450	64.817	4D22	2D22	219.622	138.117
	209	Left support	300	500	193.290	64.430	4D22	2D22	219.622	138.117
		Field	300	500	38.658	86.094	2D22	2D22	133.229	133.229
		Right support	300	500	187.210	62.403	4D22	2D22	219.622	138.117
	212	Left support	300	500	206.287	68.762	4D22	2D22	219.622	138.117
		Field	300	500	41.257	92.664	2D22	2D22	133.229	133.229
		Right support	300	500	199.980	66.660	4D22	2D22	219.622	138.117
	213	Left support	300	500	201.738	67.246	4D22	2D22	219.622	138.117
		Field	300	500	41.914	98.484	2D22	2D22	133.229	133.229
		Right support	300	500	209.569	69.856	4D22	2D22	219.622	138.117
	215	Left support	300	500	203.261	67.754	4D22	2D22	219.622	138.117
		Field	300	500	40.652	92.656	2D22	2D22	133.229	133.229
		Right support	300	500	202.981	67.660	4D22	2D22	219.622	138.117
	217	Left support	300	500	205.003	68.334	4D22	2D22	219.622	138.117
		Field	300	500	41.253	98.483	2D22	2D22	133.229	133.229
		Right support	300	500	206.263	68.754	4D22	2D22	219.622	138.117
	224	Left support	300	500	200.108	66.703	4D22	2D22	219.622	138.117
		Field	300	500	40.736	101.068	2D22	2D22	133.229	133.229
		Right support	300	500	203.680	67.893	4D22	2D22	219.622	138.117
	219	Left support	300	500	131.459	94.424	3D22	2D22	167.895	136.194
		Field	300	500	26.292	26.292	2D22	2D22	133.229	133.229
		Right support	300	500	130.763	88.970	3D22	2D22	167.895	136.194
	233	Left support	300	500	128.282	91.275	3D22	2D22	167.895	136.194
		Field	300	500	26.816	26.816	2D22	2D22	133.229	133.229
		Right support	300	500	134.079	92.257	3D22	2D22	167.895	136.194

3rd floor	380	Left support	300	500	174.146	58.049	4D22	2D22	219.622	138.117
		Field	300	500	39.077	86.903	2D22	2D22	133.229	133.229
		Right support	300	500	195.385	65.128	4D22	2D22	219.622	138.117
	394	Left support	300	500	195.269	65.090	4D22	2D22	219.622	138.117
		Field	300	500	39.054	86.335	2D22	2D22	133.229	133.229
		Right support	300	500	176.694	58.898	4D22	2D22	219.622	138.117
	397	Left support	300	500	202.871	67.624	4D22	2D22	219.622	138.117
		Field	300	500	40.574	92.880	2D22	2D22	133.229	133.229
		Right support	300	500	197.081	65.694	4D22	2D22	219.622	138.117
	398	Left support	300	500	197.301	65.767	4D22	2D22	219.622	138.117
		Field	300	500	42.010	98.599	2D22	2D22	133.229	133.229
		Right support	300	500	210.051	70.017	4D22	2D22	219.622	138.117
	400	Left support	300	500	198.860	66.287	4D22	2D22	219.622	138.117
		Field	300	500	40.180	92.871	2D22	2D22	133.229	133.229
		Right support	300	500	200.900	66.967	4D22	2D22	219.622	138.117
	402	Left support	300	500	198.967	66.322	4D22	2D22	219.622	138.117
		Field	300	500	41.637	98.598	2D22	2D22	133.229	133.229
		Right support	300	500	208.183	69.394	4D22	2D22	219.622	138.117
	409	Left support	300	500	200.151	66.717	4D22	2D22	219.622	138.117
		Field	300	500	40.401	101.306	2D22	2D22	133.229	133.229
		Right support	300	500	202.004	67.335	4D22	2D22	219.622	138.117
	404	Left support	300	500	119.137	81.911	3D22	2D22	167.895	136.194
		Field	300	500	23.981	23.981	2D22	2D22	133.229	133.229
		Right support	300	500	119.903	76.123	3D22	2D22	167.895	136.194
	418	Left support	300	500	116.577	79.390	3D22	2D22	167.895	136.194
		Field	300	500	24.533	24.533	2D22	2D22	133.229	133.229
		Right support	300	500	122.663	78.844	3D22	2D22	167.895	136.194
4th floor	565	Left support	300	500	162.545	54.182	4D22	2D22	219.622	138.117
		Field	300	500	38.264	86.893	2D22	2D22	133.229	133.229
		Right support	300	500	191.322	63.774	4D22	2D22	219.622	138.117
	579	Left support	300	500	192.153	64.051	4D22	2D22	219.622	138.117
		Field	300	500	38.431	86.329	2D22	2D22	133.229	133.229
		Right support	300	500	163.189	54.396	4D22	2D22	219.622	138.117
	582	Left support	300	500	195.450	65.150	4D22	2D22	219.622	138.117
		Field	300	500	39.090	93.059	2D22	2D22	133.229	133.229
		Right support	300	500	189.968	63.323	4D22	2D22	219.622	138.117
	583	Left support	300	500	188.955	62.985	4D22	2D22	219.622	138.117
		Field	300	500	41.201	98.520	2D22	2D22	133.229	133.229
		Right support	300	500	206.007	68.669	4D22	2D22	219.622	138.117
	585	Left support	300	500	190.323	63.441	4D22	2D22	219.622	138.117
		Field	300	500	38.947	93.049	2D22	2D22	133.229	133.229
		Right support	300	500	194.734	64.911	4D22	2D22	219.622	138.117
	587	Left support	300	500	189.099	63.033	4D22	2D22	219.622	138.117
		Field	300	500	41.100	98.520	2D22	2D22	133.229	133.229
		Right support	300	500	205.501	68.500	4D22	2D22	219.622	138.117
	594	Left support	300	500	195.796	65.265	4D22	2D22	219.622	138.117
		Field	300	500	39.198	101.226	2D22	2D22	133.229	133.229
		Right support	300	500	195.991	65.330	4D22	2D22	219.622	138.117
	589	Left support	300	500	101.630	65.026	2D22	2D22	133.229	133.229
		Field	300	500	20.730	20.730	2D22	2D22	133.229	133.229
		Right support	300	500	103.648	59.365	2D22	2D22	133.229	133.229
	603	Left support	300	500	99.809	63.253	2D22	2D22	133.229	133.229
		Field	300	500	21.147	21.147	2D22	2D22	133.229	133.229
		Right support	300	500	105.733	61.402	2D22	2D22	133.229	133.229

5th floor	750	Left support	300	500	148.034	49.345	4D22	2D22	219.622	138.117
		Field	300	500	36.321	86.847	2D22	2D22	133.229	133.229
		Right support	300	500	181.607	60.536	4D22	2D22	219.622	138.117
	764	Left support	300	500	183.361	61.120	4D22	2D22	219.622	138.117
		Field	300	500	36.672	86.287	2D22	2D22	133.229	133.229
		Right support	300	500	146.677	48.892	4D22	2D22	219.622	138.117
	767	Left support	300	500	183.706	61.235	4D22	2D22	219.622	138.117
		Field	300	500	36.741	93.222	2D22	2D22	133.229	133.229
		Right support	300	500	178.517	59.506	4D22	2D22	219.622	138.117
	768	Left support	300	500	176.914	58.971	4D22	2D22	219.622	138.117
		Field	300	500	39.282	98.529	2D22	2D22	133.229	133.229
		Right support	300	500	196.408	65.469	4D22	2D22	219.622	138.117
	770	Left support	300	500	177.358	59.119	4D22	2D22	219.622	138.117
		Field	300	500	36.864	93.213	2D22	2D22	133.229	133.229
		Right support	300	500	184.318	61.439	4D22	2D22	219.622	138.117
	772	Left support	300	500	175.485	58.495	4D22	2D22	219.622	138.117
		Field	300	500	39.460	98.529	2D22	2D22	133.229	133.229
		Right support	300	500	197.301	65.767	4D22	2D22	219.622	138.117
	779	Left support	300	500	186.570	62.190	4D22	2D22	219.622	138.117
		Field	300	500	37.314	101.314	2D22	2D22	133.229	133.229
		Right support	300	500	185.067	61.689	4D22	2D22	219.622	138.117
	774	Left support	300	500	78.920	42.064	2D22	2D22	133.229	133.229
		Field	300	500	16.426	16.426	2D22	2D22	133.229	133.229
		Right support	300	500	82.129	36.842	2D22	2D22	133.229	133.229
	788	Left support	300	500	77.999	41.196	2D22	2D22	133.229	133.229
		Field	300	500	16.674	16.674	2D22	2D22	133.229	133.229
		Right support	300	500	83.369	38.028	2D22	2D22	133.229	133.229
6th floor	935	Left support	300	500	131.381	43.794	3D22	2D22	167.895	136.194
		Field	300	500	33.148	87.156	2D22	2D22	133.229	133.229
		Right support	300	500	165.740	55.247	3D22	2D22	167.895	136.194
	949	Left support	300	500	168.458	56.153	4D22	2D22	219.622	138.117
		Field	300	500	33.692	86.601	2D22	2D22	133.229	133.229
		Right support	300	500	127.874	42.625	4D22	2D22	219.622	138.117
	952	Left support	300	500	169.466	56.489	4D22	2D22	219.622	138.117
		Field	300	500	33.893	93.107	2D22	2D22	133.229	133.229
		Right support	300	500	164.097	54.699	4D22	2D22	219.622	138.117
	953	Left support	300	500	162.115	54.038	4D22	2D22	219.622	138.117
		Field	300	500	36.894	98.296	2D22	2D22	133.229	133.229
		Right support	300	500	184.472	61.491	4D22	2D22	219.622	138.117
	955	Left support	300	500	161.273	53.758	4D22	2D22	219.622	138.117
		Field	300	500	34.290	93.092	2D22	2D22	133.229	133.229
		Right support	300	500	171.449	57.150	4D22	2D22	219.622	138.117
	957	Left support	300	500	158.992	52.997	4D22	2D22	219.622	138.117
		Field	300	500	37.384	98.296	2D22	2D22	133.229	133.229
		Right support	300	500	186.921	62.307	4D22	2D22	219.622	138.117
	964	Left support	300	500	175.027	58.342	4D22	2D22	219.622	138.117
		Field	300	500	35.005	100.853	2D22	2D22	133.229	133.229
		Right support	300	500	171.661	57.220	4D22	2D22	219.622	138.117
	959	Left support	300	500	50.594	16.865	2D22	2D22	133.229	133.229
		Field	300	500	10.986	10.986	2D22	2D22	133.229	133.229
		Right support	300	500	54.929	18.310	2D22	2D22	133.229	133.229
	973	Left support	300	500	50.627	16.876	2D22	2D22	133.229	133.229
		Field	300	500	11.070	11.070	2D22	2D22	133.229	133.229
		Right support	300	500	55.348	18.449	2D22	2D22	133.229	133.229

Roof floor	1134	Left support	300	500	137.557	45.852	3D22	2D22	167.895	136.194
		Field	300	500	27.511	63.002	2D22	2D22	133.229	133.229
		Right support	300	500	87.007	29.002	3D22	2D22	167.895	136.194
	1137	Left support	300	500	117.478	39.159	3D22	2D22	167.895	136.194
		Field	300	500	23.496	65.228	2D22	2D22	133.229	133.229
		Right support	300	500	114.471	38.157	3D22	2D22	167.895	136.194
	1138	Left support	300	500	114.121	38.040	3D22	2D22	167.895	136.194
		Field	300	500	25.329	69.344	2D22	2D22	133.229	133.229
		Right support	300	500	126.647	42.216	3D22	2D22	167.895	136.194
	1140	Left support	300	500	110.435	36.812	3D22	2D22	167.895	136.194
		Field	300	500	24.155	65.250	2D22	2D22	133.229	133.229
		Right support	300	500	120.774	40.258	3D22	2D22	167.895	136.194
	1142	Left support	300	500	109.680	36.560	3D22	2D22	167.895	136.194
		Field	300	500	26.053	69.345	2D22	2D22	133.229	133.229
		Right support	300	500	130.264	43.421	3D22	2D22	167.895	136.194
	1149	Left support	300	500	126.898	42.299	3D22	2D22	167.895	136.194
		Field	300	500	25.380	75.070	2D22	2D22	133.229	133.229
		Right support	300	500	122.185	40.728	3D22	2D22	167.895	136.194
	1346	Left support	300	500	134.412	44.804	3D22	2D22	167.895	136.194
		Field	300	500	26.882	63.002	2D22	2D22	133.229	133.229
		Right support	300	500	92.011	30.670	3D22	2D22	167.895	136.194
	1144	Left support	300	500	31.089	10.363	2D22	2D22	133.229	133.229
		Field	300	500	6.916	6.916	2D22	2D22	133.229	133.229
		Right support	300	500	34.578	11.526	2D22	2D22	133.229	133.229
	1158	Left support	300	500	32.118	10.706	2D22	2D22	133.229	133.229
		Field	300	500	6.694	6.694	2D22	2D22	133.229	133.229
		Right support	300	500	33.472	11.157	2D22	2D22	133.229	133.229
	11	Left support	300	500	88.439	29.480	2D22	2D22	133.229	133.229
		Field	300	500	17.688	32.565	2D22	2D22	133.229	133.229
		Right support	300	500	29.198	9.733	2D22	2D22	133.229	133.229
	13	Left support	300	500	29.604	9.868	2D22	2D22	133.229	133.229
		Field	300	500	17.612	32.545	2D22	2D22	133.229	133.229
		Right support	300	500	88.059	29.353	2D22	2D22	133.229	133.229

Attachment VIII.3. Calculation of the shear force combination as necessary beam-4 due to load combination

Floor	Beam No	Beam position	Beam moment (kNm)				Load Combination (kNm)										
			V _D	V _L	V _{Ex}	V _{Ey}	1,4V _D	1,2V _D +1,6V _L	1,2V _D +V _L +2V _E		1,2V _D +V _L -2V _E		0,9V _D +2V _E		0,9V _D -2V _E		
									(V _{Ex} +0,3V _{Ey})	(0,3V _{Ex} +V _{Ey})	(V _{Ex} +0,3V _{Ey})	(0,3V _{Ex} +V _{Ey})	(V _{Ex} +0,3V _{Ey})	(0,3V _{Ex} +V _{Ey})	(V _{Ex} +0,3V _{Ey})	(0,3V _{Ex} +V _{Ey})	
1st floor	5	Left support	-58.250	-20.795	22.476	-20.231	-81.550	-103.172	-57.882	-117.671	-123.508	-63.719	-19.612	-79.401	-85.238	-25.449	
		Field	13.089	6.536	27.349	-24.332	18.325	26.164	62.342	-10.012	-17.856	54.497	51.879	-20.475	-28.319	44.035	
		Right support	52.461	17.110	27.912	-24.899	73.445	90.329	120.948	47.012	39.179	113.114	88.100	14.164	6.330	80.266	
	19	Left support	-52.460	-17.110	26.803	-23.978	-73.444	-90.328	-40.843	-111.936	-119.281	-48.188	-7.995	-79.088	-86.433	-15.340	
		Field	6.313	3.060	23.932	-21.423	8.838	12.472	45.646	-17.851	-24.375	39.122	40.692	-22.805	-29.329	34.169	
		Right support	58.252	20.795	32.675	-28.969	81.553	103.174	138.666	52.364	42.729	129.030	100.395	14.094	4.458	90.760	
	22	Left support	-60.960	-23.552	26.826	-30.069	-85.344	-110.835	-61.093	-140.746	-132.315	-52.662	-19.253	-98.906	-90.475	-10.822	
		Field	10.221	4.246	21.747	-24.297	14.309	19.059	45.427	-19.035	-12.405	52.057	38.115	-26.347	-19.717	44.745	
		Right support	60.543	23.466	20.580	-22.805	84.760	110.197	123.595	62.856	68.641	129.380	81.966	21.227	27.012	87.751	
	23	Left support	-62.411	-24.355	22.172	-20.180	-87.375	-113.861	-67.012	-126.305	-131.484	-72.191	-23.934	-83.227	-88.406	-29.113	
		Field	10.101	4.181	23.010	-20.689	14.141	18.811	49.909	-11.270	-17.304	43.874	42.698	-18.481	-24.516	36.663	
		Right support	63.088	24.789	29.946	-26.724	88.323	115.368	144.352	65.014	56.637	135.975	100.637	21.299	12.922	92.260	
	25	Left support	-60.545	-23.466	26.684	-29.955	-84.763	-110.200	-60.725	-140.020	-131.515	-52.220	-19.096	-98.390	-89.886	-10.591	
		Field	10.652	4.402	21.732	-24.284	14.913	19.826	46.078	-18.344	-11.709	52.713	38.480	-25.942	-19.307	45.116	
		Right support	60.958	23.552	20.786	-23.050	85.341	110.833	124.444	63.073	68.960	130.330	82.604	21.234	27.120	88.491	
	27	Left support	-62.413	-24.355	26.414	-29.514	-87.378	-113.864	-64.131	-142.430	-134.370	-56.071	-21.052	-99.351	-91.291	-12.992	
		Field	10.100	4.181	21.261	-23.626	14.140	18.810	44.647	-18.194	-12.045	50.796	37.436	-25.405	-19.256	43.585	
		Right support	63.086	24.789	20.357	-22.445	88.320	115.366	127.739	67.816	73.245	133.168	84.024	24.102	29.530	89.453	
	34	Left support	-60.339	-25.557	21.466	-19.670	-84.475	-113.298	-66.834	-124.424	-129.094	-71.503	-23.175	-80.766	-85.435	-27.845	
		Field	11.375	4.854	22.622	-20.446	15.925	21.416	51.480	-8.815	-14.472	45.823	43.214	-17.081	-22.739	37.556	
		Right support	60.341	25.557	29.662	-26.570	84.477	113.300	141.348	62.623	54.584	133.309	97.689	18.964	10.925	89.650	
	29	Left support	-13.053	-4.140	80.997	-92.088	-18.274	-22.288	86.938	-155.381	-126.545	115.774	94.994	-147.326	-118.489	123.830	
		Field	1.175	-0.122	76.130	-86.512	1.645	1.215	101.641	-126.058	-99.065	128.634	101.410	-126.289	-99.295	128.404	
		Right support	13.814	4.256	72.773	-82.588	19.340	23.386	116.826	-100.679	-75.160	142.345	108.426	-109.080	-83.561	133.945	
	43	Left support	-13.049	-4.140	82.579	-72.766	-18.269	-22.283	101.700	-115.783	-141.297	76.186	109.754	-107.729	-133.243	84.241	
		Field	1.180	-0.122	87.325	-76.833	1.652	1.221	129.844	-99.977	-127.256	102.565	129.612	-100.209	-127.488	102.333	
		Right support	13.819	4.256	92.264	-81.155	19.347	23.392	156.674	-86.113	-114.996	127.790	148.272	-94.515	-123.398	119.389	
	2nd floor	195	Left support	-56.610	-20.103	25.433	-23.566	-79.254	-100.097	-51.309	-119.907	-124.761	-56.163	-14.223	-82.821	-87.675	-19.077
			Field	14.659	7.198	29.577	-27.405	20.523	29.108	67.500	-12.275	-17.922	61.853	55.904	-23.871	-29.518	50.257
			Right support	54.125	17.814	30.204	-27.996	75.775	93.452	126.374	44.894	39.154	120.634	92.323	10.843	5.102	86.582
		209	Left support	-54.122	-17.814	29.702	-27.484	-75.771	-93.449	-39.847	-119.907	-125.674	-45.614	-5.796	-85.857	-91.623	-11.563
			Field	4.693	2.377	26.539	-24.592	6.570	9.435	46.331	-25.252	-30.314	41.269	42.547	-29.037	-34.099	37.484
			Right support	56.614	20.103	34.656	-32.166	79.260	100.102	138.052	44.501	38.027	131.578	100.965	7.414	0.940	94.491
		212	Left support	-61.048	-23.492	30.539	-32.906	-85.467	-110.845	-55.415	-144.238	-138.084	-49.261	-13.609	-102.432	-96.278	-7.455
			Field	10.076	4.274	25.219	-27.212	14.106	18.930	50.476	-22.927	-17.746	55.658	43.179	-30.224	-25.042	48.361
			Right support	60.411	23.508	24.348	-26.315	84.575	110.106	128.908	57.980	63.094	134.022	87.277	16.349	21.463	92.391
213		Left support	-61.340	-23.929	26.608	-24.657	-85.876	-111.894	-59.115	-130.886	-135.959	-64.188	-16.784	-88.555	-93.628	-21.857	
		Field	11.045	4.555	26.417	-24.491	15.463	20.542	55.948	-15.323	-20.330	50.941	48.080	-23.191	-28.199	43.072	
		Right support	64.107	25.187	33.102	-30.687	89.750	117.228	149.907	60.603	54.324	143.628	105.488	16.184	9.905	99.209	
215		Left support	-60.414	-23.508	30.364	-32.774	-84.580	-110.110	-54.941	-143.334	-137.068	-48.675	-13.309	-101.702	-95.436	-7.043	
		Field	10.739	4.348	25.205	-27.201	15.035	19.844	51.324	-22.044	-16.855	56.514	43.755	-29.614	-24.424	48.944	
		Right support	61.044	23.492	24.496	-26.440	85.462	110.840	129.873	58.562	63.617	134.927	88.068	16.757	21.812	93.122	
217		Left support	-61.343	-23.929	30.603	-33.023	-85.880	-111.898	-56.148	-145.225	-138.933	-49.856	-13.817	-102.893	-96.601	-7.525	
		Field	11.042	4.555	25.298	-27.283	15.459	20.538	52.032	-21.582	-16.421	57.193	44.164	-29.449	-24.288	49.325	
		Right support	64.103	25.187	24.777	-26.728	89.744	117.223	135.628	63.521	68.593	140.700	91.210	19.103	24.176	96.283	
224		Left support	-60.424	-25.595	26.848	-24.891	-84.594	-113.461	-59.342	-131.777	-136.865	-64.431	-15.620	-88.055	-93.143	-20.708	
		Field	11.393	4.860	26.693	-24.755	15.950	21.448	57.065	-14.963	-20.001	52.026	48.787	-23.241	-28.279	43.748	
		Right support	60.427	25.595	33.474	-31.034	84.598	113.464	146.435	56.124	49.780	140.091	102.712	12.401	6.057	96.368	
219		Left support	-12.676	-4.228	88.153	-95.254	-17.746	-21.976	99.714	-157.055	-138.593	118.177	107.745	-149.025	-130.562	126.208	
		Field	1.463	-0.250	82.926	-89.622	2.048	1.356	113.584	-127.983	-110.573	130.994	113.396	-128.172	-110.762	130.805	
		Right support	14.055	4.111	79.561	-85.995	19.677	23.444	128.502	-103.276	-86.548	145.230	120.175	-111.604	-94.876	136.903	
233		Left support	-12.668	-4.228	85.968	-79.526	-17.735	-21.966	104.791	-126.901	-143.650	88.042	112.819	-118.872	-135.622	96.070	
		Field	1.471	-0.250	90.360	-83.610	2.059	1.365	132.069	-111.489	-129.039	114.519	131.878	-111.680	-129.230	114.328	
		Right support	14.063	4.111	95.395	-88.293	19.688	23.453	158.801	-98.362	-116.828	140.336	150.471	-106.692	-125.158	132.006	
3rd floor		380	Left support	-55.626	-19.687	25.056	-23.344	-77.876	-98.250	-50.333	-118.093	-122.544	-54.784	-13.958	-81.718	-86.169	-18.409
			Field	15.602	7.599	27.769	-25.899	21.843	30.881	66.320	-8.815	-13.677	61.458	54.040	-21.095	-25.957	49.178
			Right support	55.117	18.238	28.323	-26.433	77.164	95.321	125.165	48.506	43.592	120.251	90.392	13.733	8.819	85.478
		394	Left support	-55.113	-18.238	28.635	-26.648	-77.158	-95.316	-43.092	-120.489	-125.655	-48.259	-8.321	-95.717	-90.883	-13.487
			Field	3.754	1.979	25.536	-23.814	5.256	7.671	43.267	-25.823	-30.300	38.790	40.162	-28.928	-33.405	35.685
			Right support	55.631	19.687	31.862	-29.776	77.883	98.256	132.303	46.009	40.586	126.879	95.926	9.633	4.210	90.503
		397	Left support	-61.195	-23.475	28.837	-30.858	-85.673	-110.994	-57.750	-141.323	-136.068	-52.495	-15.916	-99.489	-94.235	-10.662
			Field	9.949	4.292	24.450	-26.218	13.929	18.806	49.400	-21.535	-16.938	53.997	42.123	-28.812	-24.215	46.720
			Right support	60.292	23.535	24.216	-26.019	84.409	110.006	128.706	58.377	63.065	133.994	87.083	16.75		

4th floor	565	Left support	-54.785	-19.350	23.097	-21.575	-76.699	-96.702	-51.843	-114.384	-118.341	-55.800	-16.058	-78.598	-82.556	-20.015
		Field	16.408	7.925	24.253	-22.720	22.971	32.370	62.489	-3.274	-7.259	58.503	49.641	-16.121	-20.107	45.655
		Right support	55.962	18.582	24.718	-23.191	78.347	96.886	121.258	54.185	50.215	117.288	85.887	18.815	14.844	81.917
	579	Left support	-55.957	-18.582	25.715	-24.008	-78.340	-96.880	-48.705	-118.317	-122.756	-53.143	-13.336	-82.948	-87.387	-17.774
		Field	2.937	1.651	22.910	-21.449	4.112	6.166	38.126	-23.977	-27.775	34.327	35.594	-26.509	-30.307	31.795
		Right support	54.791	19.350	27.295	-25.631	76.707	96.709	124.311	50.214	45.888	119.984	88.523	14.427	10.101	84.197
	582	Left support	-61.340	-23.460	25.391	-27.047	-85.876	-111.144	-62.514	-135.927	-131.622	-58.209	-20.652	-94.065	-89.760	-16.347
		Field	9.807	4.305	22.096	-23.606	13.730	18.656	46.102	-17.881	-13.955	50.028	38.855	-25.128	-21.202	42.781
		Right support	60.156	23.556	22.424	-24.000	84.218	109.877	126.191	61.198	65.295	130.289	84.588	19.595	23.692	88.686
	583	Left support	-60.202	-23.515	25.295	-23.681	-84.283	-109.866	-59.376	-127.942	-132.139	-63.572	-17.800	-86.367	-90.563	-21.997
		Field	12.052	4.920	23.461	-21.960	16.873	22.334	53.128	-10.461	-14.364	49.226	44.593	-18.997	-22.899	40.690
		Right support	65.136	25.552	27.637	-25.878	91.190	119.046	143.462	68.541	63.968	138.889	98.370	23.449	18.875	93.796
	585	Left support	-60.162	-23.556	25.131	-26.849	-84.227	-109.884	-61.598	-134.370	-129.903	-57.131	-19.993	-92.765	-88.298	-15.526
		Field	11.007	4.318	22.062	-23.575	15.410	20.117	47.505	-16.386	-12.453	51.439	39.885	-24.007	-20.073	43.819
		Right support	61.333	23.460	22.429	-23.970	85.866	111.136	127.536	62.577	66.584	131.542	85.676	20.717	24.724	89.682
	587	Left support	-60.208	-23.515	26.155	-27.932	-84.291	-109.874	-60.214	-135.936	-131.315	-55.594	-18.636	-94.358	-89.738	-14.016
		Field	12.046	4.920	22.934	-24.496	16.864	22.327	50.546	-15.856	-11.795	54.607	42.012	-24.390	-20.329	46.073
		Right support	65.129	25.552	23.429	-25.032	91.181	119.038	135.546	67.700	71.868	139.713	90.455	22.610	26.777	94.623
	594	Left support	-60.401	-25.592	26.362	-24.671	-84.561	-113.428	-60.152	-131.598	-135.995	-64.548	-16.440	-87.886	-92.282	-20.836
		Field	11.393	4.860	24.506	-22.941	15.950	21.448	53.779	-12.647	-16.716	49.710	45.501	-20.925	-24.994	41.432
		Right support	60.407	25.592	28.768	-26.940	84.570	113.436	139.452	61.461	56.708	134.700	95.738	17.747	12.994	90.986
	589	Left support	-12.165	-4.268	64.784	-69.194	-17.031	-21.427	69.186	-118.384	-106.918	80.652	77.103	-110.466	-99.000	88.569
		Field	1.909	-0.314	61.020	-65.186	2.673	1.788	84.905	-91.783	-80.952	95.737	84.647	-92.042	-81.210	95.478
		Right support	14.479	4.043	59.073	-63.114	20.271	23.844	101.695	-69.366	-58.860	112.202	93.309	-77.753	-67.247	103.815
603	Left support	-12.150	-4.268	63.164	-59.110	-17.010	-21.409	72.014	-99.170	-109.710	61.474	79.927	-91.257	-101.797	69.387	
	Field	1.923	-0.314	65.731	-61.529	2.692	1.805	96.538	-81.626	-92.551	85.613	96.275	-81.889	-92.814	85.350	
	Right support	14.493	4.043	69.406	-64.985	20.290	23.860	121.256	-66.892	-78.386	109.761	112.865	-75.283	-86.777	101.370	
750	Left support	-54.187	-19.099	19.527	-18.268	-75.862	-95.583	-56.030	-108.943	-112.217	-59.304	-20.675	-73.588	-76.862	-23.949	
	Field	16.994	8.167	19.009	-17.924	23.792	33.460	55.823	4.117	1.296	53.002	42.558	-9.148	-11.969	39.373	
	Right support	56.584	18.839	19.363	-18.314	79.218	98.043	114.477	61.730	59.002	111.750	78.663	25.915	23.188	75.936	
764	Left support	-56.578	-18.839	20.993	-19.649	-79.209	-98.036	-56.536	-113.435	-116.929	-60.030	-20.724	-77.622	-81.117	-24.218	
	Field	2.354	1.406	18.662	-17.571	3.296	5.074	31.012	-19.714	-22.551	28.176	28.900	-24.626	-24.663	26.063	
	Right support	54.194	19.099	20.777	-19.666	75.872	95.951	113.886	57.266	54.377	110.998	78.529	21.909	19.020	75.640	
767	Left support	-61.509	-23.449	20.121	-21.283	-86.113	-111.329	-69.788	-127.753	-124.732	-66.766	-27.886	-85.852	-82.830	-24.865	
	Field	9.659	4.312	18.132	-19.292	13.523	18.490	40.592	-11.802	-8.786	43.608	33.382	-19.012	-15.996	36.398	
	Right support	60.011	23.569	19.000	-20.276	84.015	109.724	121.417	66.430	69.748	124.734	79.844	24.858	28.176	83.162	
768	Left support	-59.874	-23.383	21.914	-20.600	-83.824	-109.262	-63.764	-123.283	-126.700	-67.180	-22.419	-81.938	-85.355	-25.835	
	Field	12.346	5.037	19.471	-18.305	17.284	22.874	47.811	-5.075	-8.107	44.780	39.070	-13.816	-16.848	36.039	
	Right support	65.433	25.672	21.971	-20.671	91.606	119.595	135.731	76.032	72.652	132.351	90.429	30.730	27.350	87.049	
770	Left support	-60.017	-23.569	19.796	-21.024	-84.024	-109.731	-68.612	-125.760	-122.567	-65.419	-27.038	-84.186	-80.993	-23.845	
	Field	11.162	4.308	18.084	-19.242	15.627	20.287	42.325	-9.931	-6.920	45.336	34.669	-17.588	-14.577	37.679	
	Right support	61.502	23.449	18.959	-20.194	86.103	111.321	123.053	68.239	71.450	126.264	81.153	26.339	29.550	84.364	
772	Left support	-59.881	-23.383	21.066	-22.383	-83.833	-109.270	-66.538	-127.367	-123.942	-63.114	-25.191	-86.019	-82.595	-21.767	
	Field	12.340	5.037	19.239	-20.462	17.276	22.867	46.046	-9.536	-6.356	49.226	37.307	-18.275	-15.095	40.487	
	Right support	65.426	25.672	20.204	-21.506	91.596	119.586	131.688	73.294	76.679	135.073	86.388	27.994	31.379	89.773	
779	Left support	-60.395	-25.594	23.307	-21.892	-84.553	-113.424	-64.589	-127.868	-131.547	-68.268	-20.877	-84.155	-87.834	-24.556	
	Field	11.395	4.860	20.786	-19.538	15.953	21.450	48.383	-8.070	-11.315	45.138	40.105	-16.349	-19.594	36.860	
	Right support	60.402	25.594	23.335	-21.952	84.563	113.433	131.575	68.173	64.578	127.979	87.861	24.459	20.863	84.265	
774	Left support	-12.036	-4.277	46.139	-48.943	-16.850	-21.286	44.192	-88.923	-81.632	51.482	52.080	-81.035	-73.745	59.370	
	Field	2.024	-0.332	43.542	-46.197	2.834	1.898	61.463	-64.172	-57.269	68.366	61.187	-64.447	-57.544	68.090	
	Right support	14.593	4.023	42.534	-45.138	20.430	23.948	79.520	-43.221	-36.451	86.290	71.119	-51.622	-44.852	77.889	
788	Left support	-12.020	-4.277	45.218	-42.600	-16.828	-21.267	46.175	-76.770	-83.577	39.368	54.058	-68.887	-75.694	47.251	
	Field	2.040	-0.332	46.592	-43.912	2.856	1.917	68.953	-57.753	-64.721	61.985	68.673	-58.033	-65.001	61.705	
	Right support	14.609	4.023	49.188	-46.369	20.453	23.968	92.108	-41.671	-49.001	84.779	83.703	-50.077	-57.407	76.373	
6th floor	935	Left support	-53.739	-19.058	14.670	-13.790	-75.235	-94.980	-62.479	-102.323	-104.611	-64.767	-27.299	-67.143	-69.431	-29.587
		Field	17.307	8.186	12.264	-11.668	24.230	33.866	46.482	12.977	11.427	44.932	33.104	-0.401	-1.951	31.554
		Right support	56.883	18.851	12.481	-11.917	79.636	98.421	104.922	70.765	69.299	103.456	69.007	34.849	33.383	67.540
	949	Left support	-56.877	-18.851	14.773	-13.894	-79.628	-98.414	-65.894	-106.028	-108.313	-68.179	-29.980	-70.114	-72.399	-32.265
		Field	1.993	1.391	13.040	-12.374	2.790	4.617	22.438	-13.141	-14.873	20.707	20.449	-15.130	-16.862	18.718
		Right support	53.745	19.058	12.573	-12.033	75.243	94.987	101.478	67.030	65.626	100.074	66.297	31.848	30.444	64.893
	952	Left support	-61.615	-23.464	13.610	-14.250	-86.261	-111.480	-78.732	-117.736	-116.072	-77.068	-36.784	-75.788	-74.124	-35.120
		Field	9.495	4.306	13.137	-13.877	13.293	18.284	33.648	-4.172	-2.248	35.572	26.493	-11.326	-9.402	28.417
		Right support	59.799	23.556	14.590	-15.486	83.719	109.448	115.203	73.097	75.426	117.533	73.708	31.601	33.931	76.037
	953	Left support	-59.345	-23.332	17.510	-16.529	-83.083	-108.545	-69.443	-117.098	-119.649	-71.994	-28.308	-75.963	-78.513	-30.859
		Field	12.779	5.080	14.439	-13.670	17.891	23.463	41.091	1.738	-0.261	39.091	32.177	-7.176	-9.175	30.178
		Right support	65.895	25.709	15.022	-14.257	92.253									

Roof floor	1134	Left support	-52.891	-9.178	9.916	-9.309	-74.047	-78.154	-58.401	-85.316	-86.894	-59.979	-33.355	-60.270	-61.849	-34.934
		Field	0.969	-0.958	8.707	-8.358	1.357	-0.370	12.604	-11.287	-12.194	11.697	13.271	-10.620	-11.527	12.364
		Right support	48.356	6.139	6.294	-6.243	67.698	67.850	73.008	55.457	55.324	72.876	52.363	34.811	34.678	52.230
	1137	Left support	-51.906	-9.313	6.964	-7.179	-72.668	-77.188	-61.980	-81.780	-81.221	-61.421	-37.095	-56.895	-56.336	-36.536
		Field	8.347	1.804	7.954	-8.358	11.686	12.903	22.714	-0.123	0.927	23.764	18.406	-4.431	-3.381	19.456
		Right support	49.782	9.577	9.854	-10.441	69.695	75.062	82.759	54.346	55.872	84.285	58.247	29.834	31.360	59.773
	1138	Left support	-50.546	-8.764	12.377	-11.715	-70.764	-74.678	-51.694	-85.423	-87.144	-53.415	-27.766	-61.495	-63.216	-29.488
		Field	10.526	2.550	8.980	-8.517	14.736	16.711	28.031	3.535	2.331	26.827	22.323	-2.173	-3.376	21.119
		Right support	54.033	10.792	7.834	-7.457	75.646	82.107	86.825	65.418	64.438	85.845	59.824	38.416	37.436	58.843
	1140	Left support	-49.792	-9.577	6.755	-7.002	-69.709	-75.074	-60.019	-79.278	-78.636	-59.376	-35.504	-54.764	-54.122	-34.862
		Field	10.502	1.658	7.848	-8.250	14.703	15.255	25.006	2.469	3.514	26.052	20.198	-2.339	-1.294	21.243
		Right support	51.898	9.313	9.693	-10.260	72.657	77.178	84.821	56.886	58.361	86.295	59.938	32.004	33.478	61.412
	1142	Left support	-50.552	-8.764	7.949	-8.343	-70.773	-74.685	-58.534	-81.343	-80.319	-57.510	-34.605	-57.413	-56.389	-33.580
		Field	10.521	2.550	9.290	-9.787	14.729	16.705	27.883	1.175	2.467	29.175	22.177	-4.531	-3.239	23.469
		Right support	54.027	10.792	11.231	-11.874	75.638	82.100	90.962	58.615	60.287	92.634	63.962	31.615	33.287	65.634
	1149	Left support	-53.652	-10.237	14.710	-13.876	-75.113	-80.762	-53.525	-93.545	-95.714	-55.693	-27.192	-67.213	-69.381	-29.361
		Field	10.155	1.948	11.001	-10.418	14.217	15.303	29.885	-0.101	-1.617	28.369	24.891	-5.096	-6.612	23.375
		Right support	53.660	10.237	9.799	-9.317	75.124	80.771	88.637	61.874	60.621	87.384	62.302	35.539	34.286	61.049
	1346	Left support	-52.904	-9.178	7.173	-7.313	-74.066	-78.170	-62.705	-82.985	-82.621	-62.341	-37.655	-57.936	-57.572	-37.291
		Field	0.958	-0.958	7.301	-7.641	1.341	-0.383	10.209	-10.710	-9.826	11.093	10.880	-10.039	-9.155	11.764
		Right support	48.344	6.139	10.123	-10.822	67.682	67.835	77.905	48.582	50.399	79.722	57.262	27.939	29.757	59.080
	1144	Left support	-11.246	-1.976	2.859	-2.618	-15.744	-16.657	-11.324	-18.992	-19.618	-11.951	-5.974	-13.642	-14.269	-6.601
		Field	1.925	-0.409	3.010	-2.812	2.695	1.656	6.234	-1.917	-2.432	5.719	6.065	-2.086	-2.600	5.551
		Right support	13.498	1.343	4.106	-4.003	18.897	18.346	23.351	11.998	11.730	23.083	17.958	6.606	6.338	17.691
	1158	Left support	-11.233	-1.976	3.924	-4.035	-15.726	-16.641	-10.029	-21.171	-20.883	-9.740	-4.683	-15.825	-15.537	-4.394
		Field	1.937	-0.409	2.668	-2.880	2.712	1.670	5.523	-2.244	-1.693	6.075	5.351	-2.416	-1.865	5.903
		Right support	13.511	1.343	2.736	-2.968	18.915	18.362	21.247	13.262	13.865	21.851	15.851	7.866	8.469	16.454
	11	Left support	-33.734	-6.140	6.363	-6.570	-47.228	-50.305	-37.837	-55.943	-55.405	-37.299	-21.577	-39.683	-39.145	-21.038
		Field	-4.099	-2.073	5.972	-6.203	-5.739	-8.236	1.230	-15.815	-15.214	1.831	4.533	-12.512	-11.911	5.134
		Right support	23.127	2.019	5.611	-5.865	32.378	30.983	37.474	21.408	22.068	38.135	28.517	12.451	13.111	29.178
	13	Left support	-23.144	-2.019	6.205	-6.410	-32.402	-31.003	-21.228	-38.889	-38.356	-20.695	-12.266	-29.927	-29.394	-11.733
		Field	6.529	2.059	5.982	-6.221	9.141	11.129	18.125	1.041	1.662	18.747	14.108	-2.977	-2.355	14.729
		Right support	33.717	6.140	5.755	-6.025	47.204	50.284	54.495	38.003	38.705	55.197	38.240	21.748	22.450	38.942

Attachment VIII.4. Calculation of shear reinforcement beams as-4

Floor	Beam No	Beam Position	beam dimension		shear force need (V_u)		$V_{u,d}$	$V_{u,2h}$	begel reinforcement	
			b	h	$V_{u,kiri}^{(-)}$	$V_{u,kanan}^{(+)}$			In plastic hinge	Out plastic hinge
			(mm)	(mm)	(kN)	(kN)	(kN)	(kN)		
1st floor	5	Left support	300	500	123.508	117.671	83.381	54.849	2dp10-105	2dp10-215
		Field	300	500	-54.497	-10.012				
		Right support	300	500	113.114	120.948	91.426	70.435	2dp10-105	
	19	Left support	300	500	119.281	111.936	83.573	58.183	2dp10-105	2dp10-215
		Field	300	500	-39.122	-17.851				
		Right support	300	500	129.030	138.666	103.383	78.295	2dp10-105	
	22	Left support	300	500	140.746	140.746	97.283	66.379	2dp10-105	2dp10-215
		Field	300	500	-52.057	-19.035				
		Right support	300	500	129.380	129.380	95.923	72.134	2dp10-105	
	23	Left support	300	500	131.484	126.305	91.953	63.846	2dp10-105	2dp10-215
		Field	300	500	-43.874	-11.270				
		Right support	300	500	135.975	144.352	109.271	84.327	2dp10-105	
	25	Left support	300	500	140.020	140.020	96.572	65.680	2dp10-105	2dp10-215
		Field	300	500	-52.713	-18.344				
		Right support	300	500	130.330	130.330	96.815	72.984	2dp10-105	
	27	Left support	300	500	142.430	142.430	98.871	67.900	2dp10-105	2dp10-215
		Field	300	500	-50.796	-18.194				
		Right support	300	500	133.168	133.168	99.047	74.785	2dp10-105	
	34	Left support	300	500	129.094	124.424	89.663	61.626	2dp10-105	2dp10-215
		Field	300	500	-45.823	-8.815				
		Right support	300	500	133.309	141.348	107.497	83.428	2dp10-105	
	29	Left support	300	500	155.381	155.381	91.356	45.833	2dp10-105	2dp10-215
		Field	300	500	-128.634	-126.058				
		Right support	300	500	142.345	142.345	81.839	38.818	2dp10-105	
	43	Left support	300	500	141.297	115.783	86.324	47.236	2dp10-105	2dp10-215
		Field	300	500	-102.565	-99.977				
		Right support	300	500	127.790	156.674	98.817	57.680	2dp10-105	
2nd floor	195	Left support	300	500	124.761	119.907	82.693	52.782	2dp10-105	2dp10-215
		Field	300	500	-61.853	-12.275				
		Right support	300	500	120.634	126.374	95.119	72.895	2dp10-105	
	209	Left support	300	500	125.674	119.907	88.040	61.282	2dp10-105	2dp10-215
		Field	300	500	-41.269	-25.252				
		Right support	300	500	131.578	138.052	101.239	75.063	2dp10-105	
	212	Left support	300	500	144.238	144.238	99.176	67.135	2dp10-105	2dp10-215
		Field	300	500	-55.658	-22.927				
		Right support	300	500	134.022	134.022	98.641	73.485	2dp10-105	
	213	Left support	300	500	135.959	130.886	93.826	63.869	2dp10-105	2dp10-215
		Field	300	500	-50.941	-15.323				
		Right support	300	500	143.628	149.907	112.660	86.176	2dp10-105	
	215	Left support	300	500	143.334	143.334	98.283	66.250	2dp10-105	2dp10-215
		Field	300	500	-56.514	-22.044				
		Right support	300	500	134.927	134.927	99.541	74.381	2dp10-105	
	217	Left support	300	500	145.225	145.225	99.594	67.150	2dp10-105	2dp10-215
		Field	300	500	-57.193	-21.582				
		Right support	300	500	140.700	140.700	104.117	78.106	2dp10-105	
	224	Left support	300	500	136.865	131.777	94.284	64.007	2dp10-105	2dp10-215
		Field	300	500	-52.026	-14.963				
		Right support	300	500	140.091	146.435	110.051	84.182	2dp10-105	
	219	Left support	300	500	157.055	157.055	92.121	45.951	2dp10-105	2dp10-215
		Field	300	500	-130.994	-127.983				
		Right support	300	500	145.230	145.230	83.640	39.848	2dp10-105	
	233	Left support	300	500	143.650	126.901	85.451	44.070	2dp10-105	2dp10-215
		Field	300	500	-114.519	-111.489				
		Right support	300	500	140.336	158.801	97.870	54.546	2dp10-105	

3rd floor	380	Left support	300	500	122.544	118.093	81.065	51.572	2dp10-105	2dp10-215
		Field	300	500	-61.458	-8.815				
		Right support	300	500	120.251	125.165	94.962	73.487	2dp10-105	
	394	Left support	300	500	125.655	120.489	88.584	62.226	2dp10-105	2dp10-215
		Field	300	500	-38.790	-25.823				
		Right support	300	500	126.879	132.303	96.657	71.311	2dp10-105	
	397	Left support	300	500	141.323	141.323	97.292	65.985	2dp10-105	2dp10-215
		Field	300	500	-53.997	-21.535				
		Right support	300	500	133.394	133.394	98.468	73.635	2dp10-105	
	398	Left support	300	500	135.301	130.564	93.248	63.347	2dp10-105	2dp10-215
		Field	300	500	-51.247	-13.944				
		Right support	300	500	142.589	148.047	111.529	85.564	2dp10-105	
	400	Left support	300	500	140.159	140.159	96.136	64.835	2dp10-105	2dp10-215
		Field	300	500	-55.126	-20.360				
		Right support	300	500	134.409	134.409	99.519	74.712	2dp10-105	
	402	Left support	300	500	141.901	141.901	97.022	65.111	2dp10-105	2dp10-215
		Field	300	500	-57.185	-19.892				
		Right support	300	500	141.511	141.511	105.126	79.255	2dp10-105	
	409	Left support	300	500	137.779	132.925	94.986	64.559	2dp10-105	2dp10-215
		Field	300	500	-52.050	-14.994				
		Right support	300	500	138.760	144.363	108.439	82.897	2dp10-105	
	404	Left support	300	500	140.647	140.647	82.746	41.577	2dp10-105	2dp10-215
		Field	300	500	-116.202	-112.605				
		Right support	300	500	131.443	131.443	76.427	37.310	2dp10-105	
	418	Left support	300	500	129.306	115.690	76.945	39.715	2dp10-105	2dp10-215
		Field	300	500	-102.966	-99.343				
		Right support	300	500	128.123	143.058	88.414	49.560	2dp10-105	
4th floor	565	Left support	300	500	118.341	114.384	78.475	50.130	2dp10-105	2dp10-215
		Field	300	500	-58.503	-3.274				
		Right support	300	500	117.288	121.258	93.185	73.224	2dp10-105	
	579	Left support	300	500	122.756	118.317	87.345	62.166	2dp10-105	2dp10-215
		Field	300	500	-34.327	-23.977				
		Right support	300	500	119.984	124.311	90.882	67.114	2dp10-105	
	582	Left support	300	500	135.927	135.927	94.008	64.202	2dp10-105	2dp10-215
		Field	300	500	-50.028	-17.881				
		Right support	300	500	130.289	130.289	96.887	73.138	2dp10-105	
	583	Left support	300	500	132.139	127.942	91.254	62.184	2dp10-105	2dp10-215
		Field	300	500	-49.226	-10.461				
		Right support	300	500	138.889	143.462	108.764	84.092	2dp10-105	
	585	Left support	300	500	134.370	134.370	92.483	62.701	2dp10-105	2dp10-215
		Field	300	500	-51.439	-16.386				
		Right support	300	500	131.542	131.542	98.195	74.484	2dp10-105	
	587	Left support	300	500	135.936	135.936	92.982	62.441	2dp10-105	2dp10-215
		Field	300	500	-54.607	-15.856				
		Right support	300	500	139.713	139.713	104.644	79.708	2dp10-105	
	594	Left support	300	500	135.995	131.598	94.131	64.366	2dp10-105	2dp10-215
		Field	300	500	-49.710	-12.647				
		Right support	300	500	134.700	139.452	105.165	80.786	2dp10-105	
	589	Left support	300	500	118.384	118.384	70.115	35.794	2dp10-105	2dp10-215
		Field	300	500	-95.737	-91.783				
		Right support	300	500	112.202	112.202	66.218	33.522	2dp10-105	
	603	Left support	300	500	109.710	99.170	65.679	34.371	2dp10-105	2dp10-215
		Field	300	500	-85.613	-81.626				
		Right support	300	500	109.761	121.256	75.520	43.001	2dp10-105	

5th floor	750	Left support	300	500	112.217	108.943	74.972	48.489	2dp10-105	2dp10-215
		Field	300	500	-53.002	4.117				
		Right support	300	500	111.750	114.477	89.599	71.910	2dp10-105	
	764	Left support	300	500	116.929	113.435	84.218	60.960	2dp10-105	2dp10-215
		Field	300	500	-28.176	-19.714				
		Right support	300	500	110.998	113.886	83.769	62.355	2dp10-105	
	767	Left support	300	500	127.753	127.753	89.124	61.657	2dp10-105	2dp10-215
		Field	300	500	-43.608	-11.802				
		Right support	300	500	124.734	124.734	93.955	72.070	2dp10-105	
	768	Left support	300	500	126.700	123.283	88.043	60.558	2dp10-105	2dp10-215
		Field	300	500	-44.780	-5.075				
		Right support	300	500	132.351	135.731	103.989	81.420	2dp10-105	
	770	Left support	300	500	125.760	125.760	87.190	59.766	2dp10-105	2dp10-215
		Field	300	500	-45.336	-9.931				
		Right support	300	500	126.264	126.264	95.562	73.732	2dp10-105	
	772	Left support	300	500	127.367	127.367	87.558	59.252	2dp10-105	2dp10-215
		Field	300	500	-49.226	-9.536				
		Right support	300	500	135.073	135.073	102.474	79.295	2dp10-105	
	779	Left support	300	500	131.547	127.868	91.717	63.397	2dp10-105	2dp10-215
		Field	300	500	-45.138	-8.070				
		Right support	300	500	127.979	131.575	100.095	77.712	2dp10-105	
	774	Left support	300	500	88.923	88.923	53.466	28.254	2dp10-105	2dp10-215
		Field	300	500	-68.366	-64.172				
		Right support	300	500	86.290	86.290	52.372	28.255	2dp10-105	
	788	Left support	300	500	83.577	76.770	50.763	27.432	2dp10-105	2dp10-215
		Field	300	500	-61.985	-57.753				
		Right support	300	500	84.779	92.108	58.325	34.305	2dp10-105	
6th floor	935	Left support	300	500	104.611	102.323	70.900	46.930	2dp10-105	2dp10-215
		Field	300	500	-44.932	12.977				
		Right support	300	500	103.456	104.922	84.195	69.458	2dp10-105	
	949	Left support	300	500	108.313	106.028	79.228	58.548	2dp10-105	2dp10-215
		Field	300	500	-20.707	-13.141				
		Right support	300	500	100.074	101.478	75.640	57.268	2dp10-105	
	952	Left support	300	500	117.736	117.736	83.176	58.603	2dp10-105	2dp10-215
		Field	300	500	-35.572	-4.172				
		Right support	300	500	117.533	117.533	90.097	70.590	2dp10-105	
	953	Left support	300	500	119.649	117.098	83.864	58.420	2dp10-105	2dp10-215
		Field	300	500	-39.091	1.738				
		Right support	300	500	124.284	126.273	98.199	78.238	2dp10-105	
	955	Left support	300	500	115.089	115.089	80.662	56.184	2dp10-105	2dp10-215
		Field	300	500	-37.628	-1.922				
		Right support	300	500	119.444	119.444	92.085	72.632	2dp10-105	
	957	Left support	300	500	116.854	116.854	80.956	55.431	2dp10-105	2dp10-215
		Field	300	500	-42.391	-1.581				
		Right support	300	500	129.044	129.044	99.598	78.660	2dp10-105	
	964	Left support	300	500	125.466	122.624	88.373	61.999	2dp10-105	2dp10-215
		Field	300	500	-39.079	-2.016				
		Right support	300	500	119.488	121.729	93.833	73.999	2dp10-105	
	959	Left support	300	500	54.219	54.219	33.901	19.455	2dp10-105	2dp10-215
		Field	300	500	-35.911	-31.669				
		Right support	300	500	55.434	55.434	35.799	21.837	2dp10-105	
	973	Left support	300	500	52.722	50.052	33.236	19.380	2dp10-105	2dp10-215
		Field	300	500	-33.720	-29.432				
		Right support	300	500	54.893	57.600	37.980	24.030	2dp10-105	

Roof floor	1134	Left support	300	500	86.894	85.316	64.669	48.866	2dp10-105	2dp10-215
		Field	300	500	-11.697	-11.287				
		Right support	300	500	72.876	73.008	54.006	40.494	2dp10-105	
	1137	Left support	300	500	81.780	81.780	57.987	41.070	2dp10-105	2dp10-215
		Field	300	500	-23.764	-0.123				
		Right support	300	500	84.285	84.285	65.257	51.728	2dp10-105	
	1138	Left support	300	500	87.144	85.423	61.452	43.184	2dp10-105	2dp10-215
		Field	300	500	-26.827	3.535				
		Right support	300	500	85.845	86.825	68.049	54.699	2dp10-105	
	1140	Left support	300	500	79.278	79.278	55.534	38.651	2dp10-105	2dp10-215
		Field	300	500	-26.052	2.469				
		Right support	300	500	86.295	86.295	67.398	53.962	2dp10-105	
	1142	Left support	300	500	81.343	81.343	56.429	38.715	2dp10-105	2dp10-215
		Field	300	500	-29.175	1.175				
		Right support	300	500	92.634	92.634	72.016	57.357	2dp10-105	
	1149	Left support	300	500	95.714	93.545	67.742	47.853	2dp10-105	2dp10-215
		Field	300	500	-28.369	-0.101				
		Right support	300	500	87.384	88.637	68.633	54.409	2dp10-105	
	1346	Left support	300	500	82.985	82.985	61.777	46.698	2dp10-105	2dp10-215
		Field	300	500	-11.093	-10.710				
		Right support	300	500	79.722	79.722	59.336	44.841	2dp10-105	
	1144	Left support	300	500	19.618	18.992	13.907	9.845	2dp10-105	2dp10-215
		Field	300	500	-5.719	-1.917				
		Right support	300	500	23.083	23.351	17.655	13.605	2dp10-105	
	1158	Left support	300	500	21.171	21.171	15.029	10.662	2dp10-105	2dp10-215
		Field	300	500	-6.075	-2.244				
		Right support	300	500	21.851	21.851	16.419	12.557	2dp10-105	
	11	Left support	300	500	55.943	55.943	42.919	33.659	2dp10-105	2dp10-215
		Field	300	500	-1.831	-15.815				
		Right support	300	500	38.135	38.135	25.973	17.326	2dp10-105	
	13	Left support	300	500	38.889	38.889	25.896	16.658	2dp10-105	2dp10-215
		Field	300	500	-18.747	1.041				
		Right support	300	500	55.197	55.197	42.989	34.309	2dp10-105	

Attachment VIII.5. Calculation of torque necessary combination column as-4 due to load combination

Floor	Column No n	Column Position	Moment Column (kNm)				Load Combination (kNm)									
			M _D	M _L	M _{Ex}	M _{Ey}	1,4M _D	1,2M _D +1,6M _L	1,2M _D +M _L +M _E (M _{Ex} +0,3.M _{Ey})	1,2M _D +M _L +M _E (0,3.M _{Ex} +M _{Ey})	1,2M _D +M _L -M _E (0,3.M _{Ex} +M _{Ey})	0,9M _D +M _E (M _{Ex} +0,3.M _{Ey})	0,9M _D -M _E (0,3.M _{Ex} +M _{Ey})			
Basement Floor	153	Under	-31.010	-13.136	87.737	-75.277	-43.414	-58.229	14.806	-99.304	-115.501	-1.392	37.244	-76.865	-93.062	21.047
		Above	14.416	6.108	171.563	#####	20.183	27.072	135.618	-122.964	-88.803	169.779	125.185	-133.397	-99.236	159.346
	154	Under	29.479	13.643	87.825	-75.353	41.271	57.204	114.237	0.012	-16.201	98.023	91.750	-22.474	-38.688	75.537
		Above	-13.712	-6.344	171.621	#####	-19.196	-26.604	89.459	-169.193	-135.055	123.597	99.916	-158.735	-124.597	134.054
	155	Under	-29.480	-13.643	87.126	-74.777	-41.271	-57.204	15.674	-97.658	-113.711	-0.379	38.161	-75.171	-91.224	22.108
		Above	13.704	6.344	171.393	#####	19.186	26.596	134.915	-123.349	-89.337	168.928	124.460	-133.804	-99.792	158.472
	156	Under	31.010	13.136	87.921	-75.428	43.413	58.229	115.640	1.295	-14.946	99.399	93.201	-21.143	-37.384	76.960
		Above	-14.423	-6.108	171.613	#####	-20.193	-27.081	88.819	-169.858	-135.651	123.026	99.254	-159.423	-125.216	133.461
	157	Under	35.405	12.964	29.502	-25.486	49.567	63.229	77.306	38.815	33.594	72.085	53.720	15.229	10.409	48.500
		Above	-16.467	-6.029	147.867	#####	-23.054	-29.406	70.850	-152.190	-122.428	100.611	81.818	-141.221	-111.559	111.580
	158	Under	1.217	1.785	66.188	-56.893	1.704	4.316	52.366	-33.792	-45.875	40.282	50.216	-35.942	-48.025	38.132
		Above	-0.570	-0.830	162.954	#####	-0.797	-2.012	105.095	-140.447	-108.122	137.420	106.095	-139.446	-107.121	138.421
	159	Under	0.976	0.606	65.140	-56.021	1.366	2.141	50.110	-34.702	-46.556	38.257	49.212	-35.601	-47.455	37.358
		Above	-0.458	-0.282	162.625	#####	-0.641	-1.000	105.595	-139.376	-107.256	137.714	106.014	-138.957	-106.837	138.133
	160	Under	-0.977	-0.606	64.845	-55.783	-1.368	-2.142	46.332	-38.108	-49.889	34.551	47.231	-37.209	-48.990	35.450
		Above	0.451	0.282	162.540	#####	0.631	0.992	107.204	-137.611	-105.559	139.256	106.787	-138.028	-105.976	138.839
161	Under	-1.218	-1.785	67.107	-57.678	-1.705	-4.318	46.557	-40.793	-53.051	34.299	48.707	-38.642	-50.900	36.449	
	Above	0.563	0.830	163.326	#####	0.788	2.003	108.357	-137.744	-105.346	140.755	107.358	-138.743	-106.345	139.756	
162	Under	-35.408	-12.964	30.014	-25.917	49.572	-63.233	-33.216	-72.368	-77.693	-38.541	-9.629	-48.781	-54.106	-14.954	
	Above	16.461	6.029	148.087	#####	23.046	29.399	122.569	-100.791	-71.005	152.355	111.602	-111.758	-81.972	141.388	
1st floor	338	Under	-40.949	-17.134	140.839	#####	-57.328	-76.552	37.534	-147.464	-170.078	14.920	66.952	-118.046	-140.660	44.338
		Above	43.340	18.263	142.034	#####	60.676	81.229	166.141	-41.000	-25.599	181.542	134.876	-72.265	-56.863	150.277
	339	Under	37.215	17.403	141.231	#####	52.101	72.503	166.126	-19.455	-42.005	143.576	137.558	-48.022	-70.572	115.009
		Above	-40.416	-18.786	142.338	#####	-56.582	-78.556	28.814	-178.716	-163.382	44.147	59.724	-147.805	-132.472	75.057
	340	Under	-37.206	-17.403	140.996	#####	-52.089	-72.493	41.776	-143.648	-165.878	19.547	70.341	-115.083	-137.313	48.112
		Above	40.400	18.786	141.958	#####	56.561	78.537	163.182	-43.622	-28.650	178.154	132.276	-74.527	-59.555	147.248
	341	Under	40.957	17.134	140.689	#####	57.339	76.562	170.008	-14.719	-37.445	147.282	140.587	-44.140	-66.865	117.862
		Above	-43.355	-18.263	142.009	#####	-60.697	-81.247	25.533	-181.642	-166.111	41.064	56.802	-150.373	-134.842	72.334
	342	Under	46.266	17.090	62.145	-52.688	64.772	82.864	118.948	38.565	26.271	106.654	87.978	7.595	-4.699	75.684
		Above	-49.269	-18.108	68.620	-73.584	-68.977	-88.096	-30.687	-130.229	-123.776	-24.233	2.202	-97.340	-90.887	8.656
	343	Under	3.715	3.300	112.915	-98.632	5.201	9.738	91.083	-57.000	-75.567	72.516	86.668	-61.414	-79.982	68.101
		Above	-2.687	-2.934	115.987	#####	-3.762	-7.918	72.295	-96.475	-84.611	84.159	76.035	-92.736	-80.871	87.899
	344	Under	-0.368	0.267	112.818	-98.882	-0.515	-0.015	82.978	-65.211	-83.327	64.862	82.822	-65.368	-83.484	64.706
		Above	-0.600	-0.599	115.549	#####	-0.840	-1.678	76.855	-91.237	-79.492	88.600	77.634	-90.458	-78.714	89.379
	345	Under	0.375	-0.267	112.694	-98.934	0.524	0.023	83.197	-64.943	-82.831	65.309	83.351	-64.789	-82.677	65.463
		Above	0.586	0.599	115.430	#####	0.820	1.661	79.407	-88.486	-76.803	91.089	78.632	-89.261	-77.578	90.315
346	Under	-3.708	-3.300	113.974	-99.571	-5.191	-9.730	76.352	-73.129	-91.852	57.629	80.765	-68.716	-87.440	62.042	
	Above	2.673	2.934	117.050	#####	3.742	7.902	85.320	-84.982	-73.037	97.265	81.584	-88.717	-76.772	93.529	
347	Under	-46.265	-17.090	63.242	-53.621	-64.770	-82.862	-25.452	-107.256	-119.763	-37.959	5.517	-76.287	-88.794	-6.990	
	Above	49.259	18.108	69.489	-74.572	68.963	88.084	124.337	23.494	30.102	130.945	91.451	-9.392	-2.784	98.059	
2nd floor	523	Under	-40.819	-16.843	131.159	#####	-57.146	-75.932	28.808	-148.228	-160.460	16.577	57.897	-119.139	-131.371	45.666
		Above	39.770	16.474	119.118	#####	55.678	74.082	145.047	-27.629	-16.652	156.025	116.642	-56.034	-45.056	127.620
	524	Under	35.400	16.714	131.814	#####	49.560	69.222	154.299	-23.625	-35.911	142.012	126.965	-50.959	-63.245	114.678
		Above	-34.888	-16.440	119.703	#####	-48.844	-68.170	-22.940	-150.585	-139.551	33.974	49.846	-123.679	-112.645	60.880
	525	Under	-35.386	-16.714	132.704	#####	-49.540	-69.205	36.569	-142.559	-154.923	24.205	63.899	-115.229	-127.593	51.535
		Above	34.869	16.440	120.277	#####	48.816	68.146	139.918	-34.436	-23.354	151.000	113.018	-61.336	-50.255	124.100
	526	Under	40.832	16.843	130.377	#####	57.165	75.948	159.914	-16.064	-28.230	147.748	130.821	-45.157	-57.323	118.655
		Above	-39.790	-16.474	118.553	#####	-55.705	-74.105	16.244	-155.616	-144.686	27.174	44.654	-127.206	-116.275	55.585
	527	Under	46.513	17.297	61.425	-54.626	65.118	83.490	118.149	36.913	28.075	109.311	86.898	5.663	-3.176	78.600
		Above	-44.990	-16.713	50.054	-53.163	-62.986	-80.729	-36.596	-108.848	-104.806	-32.555	-6.386	-78.638	-74.596	-2.345
	528	Under	5.537	4.156	109.051	#####	7.751	13.294	89.493	-57.678	-67.893	79.278	83.676	-63.495	-73.710	73.461
		Above	-5.046	-3.869	96.859	#####	-7.064	-12.245	55.870	-84.417	-75.718	64.570	61.253	-79.035	-70.335	69.952
	529	Under	-1.908	-0.193	110.565	#####	-2.671	-2.598	77.298	-71.928	-82.263	66.963	78.064	-71.162	-81.498	67.728
		Above	1.528	0.102	97.974	#####	2.139	1.996	68.487	-73.414	-64.617	77.284	67.927	-73.974	-65.177	76.724
	530	Under	1.920	0.193	110.852	#####	2.688	2.613	82.465	-67.197	-77.471	72.191	81.696	-67.966	-78.240	71.422
		Above	-1.546	-0.102	98.237	#####	-2.164	-2.018	64.793	-77.444	-68.706	73.531	65.359	-76.878	-68.141	74.096
	531	Under	-5.525	-4.156	109.703	#####	-7.735	-13.280	68.367	-79.707	-89.940	58.134	74.181	-73.893	-84.126	63.948
		Above	5.028	3.869	97.601	#####	7.040	12.224	76.207	-65.140	-56.401	84.945	70.829	-70.517	-61.778	79.568
	532	Under	-46.509	-17.297	63.076	-56.285	-65.112	-83.486	-26.917	-110.470	-119.298	-35.745	4.332	-79.220	-88.048	-4.496
		Above	44.980	16.713	51.495	-54.765	62.971	80.716	105.754	31.372	35.623	110.005	75.547	1.165	5.416	79.798
	708	Under	-42.064	-17.301	122.692	#####	-58.889	-78.157	20.562	-145.480	-156.116	9.926	50.481	-115.560	-126.196	39.845
		Above	41.880	17.228	104.248	#####	58.632	77.820	138.352	-12.510	-3.384	147.477	108.560	-42.302	-33.176	117.685
	709	Under	35.354	16.901	123.385	#####	49.495	69.467	148.163	-18.817	-29.512	137.469	120.656	-46.324	-57.019	109.961
		Above	-35.622	-16.928	104.891	#####	-49.870	-69.831	11.630	-140.160	-130.979	20.812	39.245	-112.545	-103.364	48.321
	710	Under	-35.334	-16.901	124.942	#####	-49.467	-69.443	30.655	-138.433	-149.260	19.829	58.157	-110.932	-121.758	47.4363

4th floor	893	Under	-43.504	-17.355	105.803	-99.011	-60.906	-79.973	6.540	-136.830	-145.659	-2.290	36.946	-106.424	-115.253	28.116
		Above	42.815	17.360	81.307	-86.477	59.941	79.153	124.101	6.653	13.373	130.822	93.898	-23.551	-16.831	100.618
	894	Under	35.919	16.699	106.608	-99.765	50.286	69.821	136.480	-7.981	-16.877	127.584	109.005	-35.456	-44.352	100.109
		Above	-35.496	-16.795	82.007	-87.226	-49.694	-69.467	-3.550	-122.014	-115.230	3.234	23.893	-94.570	-87.786	30.677
	895	Under	-35.894	-16.699	108.806	#####	-50.251	-69.791	18.487	-128.954	-138.030	9.411	45.954	-101.486	-110.563	36.878
		Above	35.468	16.795	83.843	-89.186	49.655	69.433	116.444	-4.677	2.269	123.389	89.008	-32.112	-25.167	95.954
	896	Under	43.529	17.355	104.388	-97.678	60.940	80.002	144.674	3.228	-5.496	135.951	114.260	-27.186	-35.909	105.537
		Above	-42.843	-17.360	80.071	-85.165	-59.980	-79.186	-14.249	-129.914	-123.292	-7.627	15.963	-99.702	-93.080	22.585
	897	Under	49.499	18.245	55.846	-52.147	69.298	88.590	117.845	42.250	37.442	113.037	84.750	9.155	4.347	79.943
		Above	-49.191	-18.322	29.644	-31.310	-68.868	-88.344	-57.100	-99.768	-97.602	-54.934	-24.021	-66.689	-64.523	-21.855
	898	Under	7.893	5.377	95.617	-89.320	11.051	18.075	83.670	-45.786	-53.973	75.483	75.925	-58.531	-61.717	67.739
		Above	-7.540	-5.189	69.394	-73.858	-10.556	-17.350	33.000	-67.276	-61.474	38.803	40.451	-59.825	-54.023	46.254
5th floor	899	Under	-4.056	-0.773	99.154	-92.708	-5.679	-6.104	65.701	-68.602	-76.981	57.322	67.691	-66.613	-74.992	59.312
		Above	3.713	0.657	72.194	-76.786	5.198	5.506	54.270	-50.016	-44.046	60.240	52.500	-51.787	-45.817	58.470
	900	Under	4.079	0.773	99.946	-93.569	5.711	6.131	77.543	-57.918	-66.207	69.253	75.546	-59.914	-68.204	67.257
		Above	-3.739	-0.657	72.928	-77.466	-5.234	-5.537	44.545	-60.731	-54.831	50.445	46.323	-58.953	-53.053	52.223
	901	Under	-7.874	-5.377	95.628	-89.453	-11.023	-18.051	53.967	-75.590	-83.618	45.939	61.706	-67.851	-75.879	53.678
		Above	7.516	5.189	69.621	-73.993	10.522	17.321	61.631	-38.899	-33.215	67.315	54.187	-46.343	-40.659	59.871
	902	Under	-49.491	-18.245	58.446	-54.397	-69.287	-88.581	-35.508	-114.497	-119.760	-40.771	-2.415	-81.405	-86.668	-7.679
		Above	49.178	18.322	31.846	-33.810	68.849	88.328	99.038	53.079	55.633	101.592	65.963	20.004	22.557	68.517
	1078	Under	-40.267	-18.262	79.946	-75.397	-56.374	-77.540	-9.256	-117.996	-123.909	-15.169	21.087	-87.653	-93.567	15.173
		Above	42.316	17.775	52.316	-54.954	59.243	79.219	104.384	29.295	32.724	107.813	73.915	-1.174	2.255	77.344
	1079	Under	31.997	17.640	80.380	-75.812	44.796	66.621	113.673	4.339	-1.600	107.734	86.434	-22.900	-28.840	80.495
		Above	-34.295	-17.092	52.937	-55.612	-48.012	-68.501	-21.992	-97.977	-94.499	-18.515	5.388	-70.596	-67.119	8.866
	1080	Under	-31.973	-17.640	82.690	-77.963	-44.762	-66.592	3.294	-109.163	-115.309	-2.852	30.526	-81.931	-88.076	24.380
		Above	34.265	17.092	55.143	-57.973	47.972	68.466	95.962	16.781	20.460	99.641	68.590	-10.591	-6.912	72.269
	1081	Under	40.291	18.262	78.610	-74.157	56.407	77.569	122.974	16.037	10.248	117.186	92.625	-14.313	-20.101	86.836
		Above	-42.345	-17.775	50.982	-53.528	-59.283	-79.253	-33.665	-106.822	-103.512	-30.355	-3.187	-76.344	-73.034	0.123
	1082	Under	51.371	20.468	49.015	-46.178	71.920	94.394	117.275	50.640	46.952	113.587	81.395	14.761	11.073	77.707
		Above	-50.515	-19.243	15.889	-16.266	-70.721	-91.407	-68.852	-91.361	-90.870	-68.362	-34.455	-56.963	-56.473	-33.964
	1083	Under	7.848	5.526	78.325	-73.746	10.987	18.259	71.145	-35.305	-41.258	65.191	63.265	-43.185	-49.138	57.311
		Above	-8.040	-5.533	47.397	-49.882	-11.255	-18.501	17.251	-50.844	-47.613	20.483	25.196	-42.899	-39.668	28.428
	1084	Under	-4.468	-0.556	79.184	-74.499	-6.255	-6.251	50.917	-56.661	-62.752	44.827	52.814	-54.765	-60.855	46.723
		Above	4.404	0.726	49.834	-52.457	6.166	6.447	40.108	-31.495	-28.086	43.518	38.060	-33.543	-30.133	41.470
	1085	Under	4.487	0.556	79.954	-75.324	6.281	6.274	63.297	-45.397	-51.417	57.278	61.395	-47.300	-53.319	55.376
		Above	-4.430	-0.726	50.737	-53.290	-6.202	-6.478	28.708	-44.111	-40.792	32.027	30.763	-42.056	-38.736	34.082
	1086	Under	-7.819	-5.526	78.060	-73.582	-10.947	-18.224	41.077	-65.073	-70.894	35.255	48.948	-57.201	-63.023	43.126
		Above	8.012	5.533	47.349	-49.707	11.217	18.468	47.584	-20.355	-17.289	50.650	39.647	-28.292	-25.226	42.713
	1087	Under	-51.353	-20.468	51.646	-48.507	-71.894	-94.372	-44.997	-115.104	-119.186	-49.079	-9.123	-79.230	-83.312	-13.205
		Above	50.499	19.243	18.198	-18.927	70.699	91.388	92.362	66.374	67.322	93.310	57.969	31.982	32.930	58.917
6th floor	1263	Under	-60.792	-14.440	45.186	-43.428	-85.108	-96.054	-55.233	-117.262	-119.547	-57.518	-22.555	-84.585	-86.870	-24.840
		Above	48.854	16.712	21.468	-21.906	68.396	85.364	90.232	59.871	60.441	90.803	58.865	28.503	29.073	59.435
	1264	Under	51.973	12.695	46.930	-45.053	72.762	82.680	108.477	44.088	41.648	106.037	80.190	15.801	13.361	77.750
		Above	-40.221	-15.596	22.349	-22.846	-56.309	-73.218	-48.366	-80.002	-79.356	-47.720	-20.704	-52.340	-51.694	-20.058
	1265	Under	-51.926	-12.695	51.964	-49.759	-72.696	-82.623	-37.970	-109.176	-112.042	-40.836	-9.697	-80.903	-83.769	-12.563
		Above	40.181	15.596	25.663	-26.398	56.254	73.170	81.556	45.114	46.070	82.512	53.906	17.464	18.420	54.862
	1266	Under	60.837	14.440	42.250	-40.647	85.172	96.108	117.500	59.472	57.388	115.416	84.809	26.781	24.697	82.725
		Above	-48.893	-16.712	19.555	-19.869	-68.451	-85.411	-61.789	-89.386	-88.978	-61.382	-30.409	-58.006	-57.599	-30.002
	1267	Under	46.818	11.577	22.907	-21.795	65.546	74.705	84.127	52.835	51.391	82.682	58.504	27.213	25.768	57.060
		Above	-49.656	-16.903	2.355	-1.803	-69.518	-86.632	-74.676	-77.587	-78.304	-75.394	-42.876	-45.787	-46.505	-43.594
	1268	Under	10.617	5.736	45.461	-42.992	14.863	21.917	51.040	-10.878	-14.088	47.830	42.119	-19.799	-23.009	38.909
		Above	-9.050	-5.620	21.901	-22.772	-12.670	-19.852	-1.410	-32.681	-31.549	-0.278	6.924	-24.347	-23.214	8.057
	1269	Under	-7.754	-2.261	64.000	-60.801	-10.856	-12.923	34.194	-53.167	-57.326	30.035	38.781	-48.579	-52.739	34.622
		Above	6.022	1.270	29.803	-31.055	8.431	9.258	28.982	-13.618	-11.990	30.610	25.906	-16.694	-15.066	27.534
	1270	Under	7.804	2.261	66.178	-63.106	10.925	12.982	58.872	-31.627	-35.621	54.878	54.270	-36.229	-40.223	50.276
		Above	-6.059	-1.270	31.279	-32.450	-8.483	-9.303	13.003	-31.607	-30.085	14.525	16.091	-28.519	-26.997	17.613
	1271	Under	-10.629	-5.736	44.644	-42.440	-14.880	-21.932	13.422	-47.537	-50.402	10.556	22.346	-38.612	-41.478	19.481
		Above	9.032	5.620	21.502	-22.208	12.645	19.831	31.299	0.701	1.619	32.216	22.969	-7.628	-6.711	23.887
	1272	Under	-46.851	-11.577	26.351	-24.731	-65.591	-74.744	-48.866	-84.623	-86.730	-50.972	-23.234	-58.991	-61.098	-25.340
		Above	49.653	16.903	1.748	-1.601	69.514	86.628	77.754	75.410	75.219	77.563	45.955	43.611	43.420	45.764
	9	Under	-14.561	2.353	22.210	-21.340	-20.385	-13.708	0.689	-29.796	-30.928	-0.443	2.704	-27.782	-28.913	1.572
		Above	0.320	-4.217	17.184	-17.761	0.448	-6.363	8.022	-16.439	-15.689	8.773	12.143	-12.318	-11.568	12.894
	12	Under	-0.413	4.217	17.077	-17.438	-0.579	6.251	15.566	-8.594	-8.124	16.036	11.473	-12.687	-12.217	11.943
		Above	14.621	-2.353	22.710	-21.899	20.470	13.780	31.333	0.107	-0.948	30.278	29.299	-1.927	-2.981	28.245
	1324	Under	52.522	12.381	22.162	-21.398	73.531	82.837	91.150	60.659	59.666	90.157	63.012	32.521	31.528	62.019
		Above	-48.194	-9.474	6.604	-6.421	-67.472	-72.991	-62.630	-71.747	-71.984	-62.867	-38.698	-47.815	-48.052	-38.934
	1331	Under	48.114	9.474	8.066	-8.271	67.360	72.796	72.796	61.360	61.626	73.062	48.888	37.452	37.718	

Attachment VIII.6. Calculation of axial force necessary combination of columns as-4 due to load combination

Floor	Column n No	Column Position	Axial force Column (kNm)				Load Combination (kNm)									
			P _D	P _L	P _{Ex}	P _{Ey}	1,4P _D	1,2P _D +1,6P _L	1,2P _D +P _L +P _E		1,2P _D +P _L -P _E		0,9P _D +P _E		0,9P _D -P _E	
									(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})
Basement Floor	153	Under	-1391.313	-396.965	759.751	-814.665	-1947.838	-2304.720	-1551.189	-2653.280	-2581.892	-1479.801	-736.830	-1838.921	-1767.533	-665.442
		Above	-1438.353	-396.965	759.751	-814.665	-2013.694	-2361.168	-1607.637	-2709.728	-2638.340	-1536.249	-779.166	-1881.257	-1809.869	-707.778
	154	Under	-1358.761	-398.634	227.853	-242.911	-1902.265	-2268.328	-1874.168	-2203.702	-2184.127	-1854.592	-1067.905	-1397.440	-1377.865	-1048.330
		Above	-1405.801	-398.634	227.853	-242.911	-1968.121	-2324.776	-1930.616	-2260.150	-2240.575	-1911.040	-1110.241	-1439.776	-1420.201	-1090.666
	155	Under	-1358.826	-398.634	753.676	-807.176	-1902.356	-2268.406	-1517.702	-2610.298	-2540.748	-1448.152	-711.420	-1804.017	-1734.467	-641.870
		Above	-1405.866	-398.634	753.676	-807.176	-1968.212	-2324.854	-1574.150	-2666.746	-2597.196	-1504.600	-753.756	-1846.353	-1776.803	-684.206
	156	Under	-1391.275	-396.965	221.757	-235.408	-1947.785	-2304.674	-1915.360	-2235.376	-2217.630	-1897.614	-1101.013	-1421.028	-1403.282	-1083.267
		Above	-1438.315	-396.965	221.757	-235.408	-2013.641	-2361.122	-1971.808	-2291.824	-2274.078	-1954.062	-1143.349	-1463.364	-1445.618	-1125.603
	157	Under	-1146.559	-220.496	631.471	-677.135	-1605.183	-1728.664	-1168.036	-2084.061	-2024.697	-1108.673	-603.573	-1519.597	-1460.234	-544.209
		Above	-1193.599	-220.496	631.471	-677.135	-1671.039	-1785.112	-1224.484	-2140.509	-2081.145	-1165.121	-645.909	-1561.933	-1502.570	-586.545
	158	Under	-1858.300	-533.527	482.893	-517.444	-2601.620	-3083.603	-2436.027	-3136.123	-3090.947	-2390.851	-1345.010	-2045.106	-1999.930	-1299.834
		Above	-1905.340	-533.527	482.893	-517.444	-2667.476	-3140.051	-2492.475	-3192.571	-3147.395	-2447.299	-1387.346	-2087.442	-2042.266	-1342.170
	159	Under	-1815.756	-557.246	493.467	-529.163	-2542.058	-3070.501	-2401.435	-3117.276	-3070.871	-2355.030	-1299.462	-2015.303	-1968.899	-1253.058
		Above	-1862.796	-557.246	493.467	-529.163	-2607.914	-3126.949	-2457.883	-3173.724	-3127.319	-2411.478	-1341.798	-2057.639	-2011.235	-1295.394
	160	Under	-1815.792	-557.246	485.166	-516.912	-2542.109	-3070.544	-2406.104	-3107.559	-3066.289	-2364.834	-1304.120	-2005.575	-1964.305	-1262.851
		Above	-1862.832	-557.246	485.166	-516.912	-2607.965	-3126.992	-2462.552	-3164.007	-3122.737	-2421.282	-1346.456	-2047.911	-2006.641	-1305.187
	161	Under	-1858.359	-533.527	507.195	-538.220	-2601.703	-3083.674	-2417.829	-3149.619	-3109.287	-2377.496	-1326.794	-2058.585	-2018.252	-1286.462
		Above	-1905.399	-533.527	507.195	-538.220	-2667.559	-3140.122	-2474.277	-3206.067	-3165.735	-2433.944	-1369.130	-2100.921	-2060.588	-1328.798
	162	Under	-1146.555	-220.496	332.707	-351.568	-1605.177	-1728.660	-1369.125	-1848.118	-1823.599	-1344.606	-804.663	-1283.655	-1259.136	-780.144
		Above	-1193.595	-220.496	332.707	-351.568	-1671.033	-1785.108	-1425.573	-1904.566	-1880.047	-1401.054	-846.999	-1325.991	-1301.472	-822.480
1st floor	338	Under	-1182.912	-335.708	574.651	-613.012	-1656.077	-1956.627	-1364.455	-2195.819	-2145.950	-1314.586	-673.873	-1505.238	-1455.368	-624.004
		Above	-1229.952	-335.708	574.651	-613.012	-1721.933	-2013.075	-1420.903	-2252.267	-2202.398	-1371.034	-716.209	-1547.574	-1497.704	-666.340
	339	Under	-1156.019	-336.070	171.970	-182.377	-1618.427	-1924.935	-1606.036	-1854.079	-1840.550	-1592.507	-923.160	-1171.203	-1157.674	-909.631
		Above	-1203.059	-336.070	171.970	-182.377	-1684.283	-1981.383	-1662.484	-1910.527	-1896.998	-1648.955	-965.496	-1213.539	-1200.010	-951.967
	340	Under	-1156.079	-336.070	565.064	-601.979	-1618.511	-1925.007	-1338.895	-2155.825	-2107.835	-1290.905	-656.001	-1472.931	-1424.941	-608.011
		Above	-1203.119	-336.070	565.064	-601.979	-1684.367	-1981.455	-1395.343	-2212.273	-2164.283	-1347.353	-698.337	-1515.267	-1467.277	-650.347
	341	Under	-1182.874	-335.708	164.095	-173.234	-1656.024	-1956.582	-1643.032	-1879.162	-1867.282	-1631.151	-952.462	-1188.592	-1176.711	-940.581
		Above	-1229.914	-335.708	164.095	-173.234	-1721.880	-2013.030	-1699.480	-1935.610	-1923.730	-1687.599	-994.798	-1230.928	-1219.047	-982.917
	342	Under	-989.685	-188.685	500.926	-534.482	-1385.559	-1489.518	-1035.726	-1760.511	-1716.888	-992.103	-550.135	-1274.921	-1231.298	-506.512
		Above	-1036.725	-188.685	500.926	-534.482	-1451.415	-1545.966	-1092.174	-1816.959	-1773.336	-1048.551	-592.471	-1317.257	-1273.634	-548.848
	343	Under	-1588.193	-448.692	372.354	-396.980	-2223.470	-2623.739	-2101.264	-2639.797	-2607.784	-2069.250	-1176.114	-1714.648	-1682.634	-1144.100
		Above	-1635.233	-448.692	372.354	-396.980	-2289.326	-2680.187	-2157.712	-2696.245	-2664.232	-2125.698	-1218.450	-1756.984	-1724.970	-1186.436
	344	Under	-1541.558	-468.546	380.510	-406.062	-2158.181	-2599.543	-2059.724	-2610.325	-2577.107	-2026.507	-1128.711	-1679.311	-1646.094	-1095.493
		Above	-1588.598	-468.546	380.510	-406.062	-2224.037	-2655.991	-2116.172	-2666.773	-2633.555	-2082.955	-1171.047	-1721.647	-1688.430	-1137.829
	345	Under	-1541.589	-468.546	365.761	-387.582	-2158.225	-2599.580	-2068.966	-2596.307	-2567.939	-2040.599	-1137.944	-1665.284	-1636.917	-1109.576
		Above	-1588.629	-468.546	365.761	-387.582	-2224.081	-2656.028	-2125.414	-2652.755	-2624.387	-2097.047	-1180.280	-1707.620	-1679.253	-1151.912
	346	Under	-1588.243	-448.692	385.479	-406.591	-2223.540	-2623.799	-2091.082	-2645.531	-2618.085	-2063.636	-1165.917	-1720.366	-1692.920	-1138.471
		Above	-1635.283	-448.692	385.479	-406.591	-2289.396	-2680.247	-2147.530	-2701.979	-2674.533	-2120.084	-1208.253	-1762.702	-1735.256	-1180.807
	347	Under	-989.671	-188.685	241.762	-253.626	-1385.539	-1489.501	-1210.616	-1557.388	-1541.964	-1195.193	-725.030	-1071.801	-1056.378	-709.607
		Above	-1036.711	-188.685	241.762	-253.626	-1451.395	-1545.949	-1267.064	-1613.836	-1598.412	-1251.641	-767.366	-1114.137	-1098.714	-751.943
	523	Under	-973.872	-273.936	380.445	-403.358	-1363.421	-1606.944	-1183.145	-1731.807	-1702.020	-1153.358	-617.047	-1165.709	-1135.922	-587.202
		Above	-1020.912	-273.936	380.445	-403.358	-1429.277	-1663.392	-1239.593	-1788.255	-1758.468	-1209.806	-659.383	-1208.045	-1178.258	-629.596
	524	Under	-952.735	-273.578	113.710	-119.853	-1333.829	-1581.007	-1339.106	-1502.600	-1494.614	-1331.120	-779.707	-943.202	-935.216	-771.722
		Above	-999.775	-273.578	113.710	-119.853	-1399.685	-1637.455	-1395.554	-1559.048	-1551.062	-1387.568	-822.043	-985.538	-977.552	-814.058
	525	Under	-952.787	-273.578	369.344	-390.967	-1333.902	-1581.069	-1164.869	-1697.086	-1668.976	-1136.759	-605.454	-1137.672	-1109.562	-577.345
		Above	-999.827	-273.578	369.344	-390.967	-1399.758	-1637.517	-1221.317	-1753.534	-1725.424	-1193.207	-647.790	-1180.008	-1151.898	-619.681
	526	Under	-973.836	-273.936	105.148	-110.243	-1363.370	-1606.901	-1370.464	-1521.238	-1514.614	-1363.841	-804.377	-955.151	-948.528	-797.754
		Above	-1020.876	-273.936	105.148	-110.243	-1429.226	-1663.349	-1426.912	-1577.686	-1571.062	-1420.289	-846.713	-997.487	-990.864	-840.090
	527	Under	-831.685	-156.256	357.449	-379.124	-1164.359	-1248.032	-910.566	-1426.167	-1397.990	-882.389	-504.805	-1020.406	-992.228	-476.627
		Above	-878.725	-156.256	357.449	-379.124	-1230.215	-1304.480	-967.014	-1482.615	-1454.438	-938.837	-547.141	-1062.742	-1034.564	-518.963
	528	Under	-1321.165	-364.973	252.558	-267.353	-1849.631	-2169.355	-1778.019	-2141.957	-2122.723	-1758.785	-1016.696	-1380.634	-1361.401	-997.463
		Above	-1368.205	-364.973	252.558	-267.353	-1915.487	-2225.803	-1834.467	-2198.405	-2179.171	-1815.233	-1059.032	-1422.970	-1403.737	-1039.799
	529	Under	-1269.297	-380.740	258.075	-273.849	-1777.016	-2132.340	-1727.976	-2100.323	-2079.817	-1707.470	-966.447	-1338.794	-1318.288	-945.941
		Above	-1316.337	-380.740	258.075	-273.849	-1842.872	-2188.788	-1784.424	-2156.771	-2136.265	-1763.918	-1008.783	-1381.130	-1360.624	-988.277
	530	Under	-1269.320	-380.740	240.222	-252.809	-1777.048	-2132.368	-1739.545	-2084.666	-2068.303	-1723.182	-978.009	-1323.130	-1306.767	-961.646
		Above	-1316.360	-380.740	240.222	-252.809	-1842.904	-2188.816	-1795.993	-2141.114	-2124.751	-1779.630	-1020.345	-1365.466	-1349.103	-1003.982
	531	Under	-1321.202	-364.973	257.919	-269.820	-1849.683	-2169.399	-1773.442	-2142.860	-2127.388	-1757.971	-1012.109			

4th floor	893	Under	-555.945	-150.018	84.871	-87.278	-778.323	-907.163	-758.456	-878.966	-875.848	-755.338	-441.655	-562.165	-559.046	-438.536
		Above	-602.985	-150.018	84.879	-87.278	-844.179	-963.611	-814.904	-935.414	-932.296	-811.786	-483.991	-604.501	-601.382	-480.872
	894	Under	-546.296	-149.032	23.835	-24.268	-764.814	-894.006	-788.033	-821.705	-821.142	-787.470	-475.112	-508.784	-508.221	-474.549
		Above	-593.336	-149.032	23.835	-24.268	-830.670	-950.454	-844.481	-878.153	-877.590	-843.918	-517.448	-551.120	-550.557	-516.885
	895	Under	-546.328	-149.032	75.499	-77.167	-764.859	-894.045	-752.277	-859.143	-856.975	-750.108	-439.346	-546.213	-544.044	-437.178
		Above	-593.368	-149.032	75.499	-77.167	-830.715	-950.493	-808.725	-915.591	-913.423	-806.556	-481.682	-588.549	-586.380	-479.514
	896	Under	-555.919	-150.018	17.505	-17.467	-778.287	-907.132	-804.856	-829.336	-829.386	-804.905	-488.062	-512.543	-512.592	-488.112
		Above	-602.959	-150.018	17.505	-17.467	-844.143	-963.580	-861.304	-885.784	-885.834	-861.353	-530.398	-554.879	-554.928	-530.448
	897	Under	-514.282	-90.436	124.475	-129.071	-719.995	-761.836	-621.821	-799.303	-793.328	-615.846	-377.100	-554.582	-548.608	-371.125
		Above	-561.322	-90.436	124.475	-129.071	-785.851	-818.284	-678.269	-855.751	-849.776	-672.294	-419.436	-596.918	-590.944	-413.461
	898	Under	-793.050	-199.514	66.288	-67.557	-1110.270	-1270.882	-1105.153	-1198.845	-1197.195	-1103.503	-667.724	-761.416	-759.766	-666.074
		Above	-840.090	-199.514	66.288	-67.557	-1176.126	-1327.330	-1161.601	-1255.293	-1253.643	-1159.951	-710.060	-803.752	-802.102	-708.410
899	Under	-727.962	-206.572	66.661	-69.007	-1019.147	-1204.070	-1034.168	-1129.135	-1126.085	-1031.118	-609.207	-704.175	-701.125	-606.157	
	Above	-775.002	-206.572	66.661	-69.007	-1085.003	-1260.518	-1090.616	-1185.583	-1182.533	-1087.566	-651.543	-746.511	-743.461	-648.493	
900	Under	-727.971	-206.572	52.198	-52.930	-1019.159	-1204.080	-1043.818	-1117.408	-1116.456	-1042.867	-618.855	-692.445	-691.493	-617.903	
	Above	-775.011	-206.572	52.198	-52.930	-1085.015	-1260.528	-1100.266	-1173.856	-1172.904	-1099.315	-661.191	-734.781	-733.829	-660.239	
901	Under	-793.061	-199.514	67.801	-67.933	-1110.285	-1270.896	-1103.766	-1198.780	-1198.608	-1103.595	-666.334	-761.348	-761.176	-666.162	
	Above	-840.101	-199.514	67.801	-67.933	-1176.141	-1327.344	-1160.214	-1255.228	-1255.056	-1160.043	-708.670	-803.684	-803.512	-708.498	
902	Under	-514.230	-90.436	16.958	-14.897	-719.922	-761.774	-695.023	-717.322	-720.001	-697.702	-450.318	-472.617	-475.296	-452.997	
	Above	-561.270	-90.436	16.958	-14.897	-785.778	-818.222	-751.471	-773.770	-776.449	-754.150	-492.654	-514.953	-517.632	-495.333	
5th floor	1078	Under	-346.786	-87.839	21.595	-17.435	-485.500	-556.686	-487.618	-514.939	-520.347	-493.026	-295.743	-323.064	-328.472	-301.151
		Above	-393.826	-87.839	21.595	-17.435	-551.356	-613.134	-544.066	-571.387	-576.795	-549.474	-338.079	-365.400	-370.808	-343.487
	1079	Under	-342.935	-86.800	8.273	-5.804	-480.109	-550.402	-491.790	-501.644	-504.854	-495.000	-302.110	-311.964	-315.173	-305.319
		Above	-389.975	-86.800	8.273	-5.804	-545.965	-606.850	-548.238	-558.092	-561.302	-551.448	-344.446	-354.300	-357.509	-347.655
	1080	Under	-342.956	-86.800	27.659	-19.606	-480.138	-550.427	-476.570	-509.656	-520.124	-487.039	-286.883	-319.969	-330.438	-297.352
		Above	-389.996	-86.800	27.659	-19.606	-545.994	-606.875	-533.018	-566.104	-576.572	-543.487	-329.219	-362.305	-372.774	-339.688
	1081	Under	-346.768	-87.839	11.794	-8.976	-485.475	-556.664	-494.859	-509.398	-513.062	-498.523	-302.990	-317.529	-321.192	-306.653
		Above	-393.808	-87.839	11.794	-8.976	-551.331	-613.112	-551.307	-565.846	-569.510	-554.971	-345.326	-359.865	-363.528	-348.989
	1082	Under	-354.974	-57.135	52.640	-52.700	-496.964	-517.385	-446.274	-520.012	-519.934	-446.196	-282.647	-356.385	-360.670	-282.569
		Above	-402.014	-57.135	52.640	-52.700	-562.820	-573.833	-502.722	-576.460	-576.382	-502.644	-324.983	-398.721	-398.643	-324.905
	1083	Under	-531.107	-117.441	13.558	-12.201	-743.550	-825.234	-744.872	-762.903	-764.667	-746.636	-468.099	-486.130	-487.894	-469.863
		Above	-578.147	-117.441	13.558	-12.201	-809.406	-881.682	-801.320	-819.351	-821.115	-803.084	-510.435	-528.466	-530.230	-512.199
	1084	Under	-458.126	-119.931	11.293	-10.382	-641.376	-741.641	-661.504	-676.676	-677.861	-662.688	-404.135	-419.308	-420.492	-405.319
		Above	-505.166	-119.931	11.293	-10.382	-707.232	-798.089	-717.952	-733.124	-734.309	-719.136	-446.471	-461.644	-462.828	-447.655
	1085	Under	-458.130	-119.931	14.453	-11.170	-641.382	-741.646	-658.585	-676.521	-680.789	-662.853	-401.215	-419.151	-423.419	-405.483
		Above	-505.170	-119.931	14.453	-11.170	-707.238	-798.094	-715.033	-732.969	-737.237	-719.301	-443.551	-461.487	-465.755	-447.819
	1086	Under	-531.107	-117.441	16.033	-13.733	-743.550	-825.234	-742.856	-763.693	-766.683	-745.846	-466.083	-486.919	-489.909	-469.073
		Above	-578.147	-117.441	16.033	-13.733	-809.406	-881.682	-799.304	-820.141	-823.131	-802.294	-508.419	-529.255	-532.245	-511.409
	1087	Under	-354.913	-57.135	27.524	-21.694	-496.878	-517.312	-462.015	-496.467	-504.046	-469.594	-298.406	-332.859	-340.438	-305.985
		Above	-401.953	-57.135	27.524	-21.694	-562.734	-573.760	-518.463	-552.915	-560.494	-526.042	-340.742	-375.195	-382.774	-348.321
	1263	Under	-137.504	-25.706	30.342	-25.152	-192.506	-206.134	-167.914	-206.760	-213.507	-174.661	-100.957	-139.803	-146.550	-107.704
		Above	-184.544	-25.706	30.342	-25.152	-258.362	-262.582	-224.362	-263.208	-269.955	-231.109	-143.293	-182.139	-188.886	-150.040
	1264	Under	-139.920	-24.501	10.814	-9.038	-195.888	-207.106	-184.302	-198.199	-200.508	-186.611	-117.825	-131.722	-134.031	-120.134
		Above	-186.960	-24.501	10.814	-9.038	-261.744	-263.554	-240.750	-254.647	-256.956	-243.059	-160.161	-174.058	-176.367	-162.470
	1265	Under	-139.925	-24.501	33.896	-28.687	-195.895	-207.112	-167.121	-210.929	-217.701	-173.893	-100.643	-144.451	-151.222	-107.414
		Above	-186.965	-24.501	33.896	-28.687	-261.751	-263.560	-223.569	-267.377	-274.149	-230.341	-142.979	-186.787	-193.558	-149.750
	1266	Under	-137.495	-25.706	12.440	-11.079	-192.493	-206.124	-181.584	-198.047	-199.816	-183.353	-114.629	-131.093	-132.862	-116.399
		Above	-184.535	-25.706	12.440	-11.079	-258.349	-262.572	-238.032	-254.495	-256.264	-239.801	-156.965	-173.429	-175.198	-158.735
1267	Under	-196.401	-24.001	20.373	-19.085	-274.961	-274.083	-245.035	-272.655	-274.330	-246.709	-162.113	-189.734	-191.408	-163.788	
	Above	-243.441	-24.001	20.373	-19.085	-340.817	-330.531	-301.483	-329.103	-330.778	-303.157	-204.449	-232.070	-233.744	-206.124	
1268	Under	-271.264	-35.669	15.490	-11.570	-379.770	-382.587	-349.167	-368.109	-373.205	-354.263	-232.119	-251.061	-256.157	-237.215	
	Above	-318.304	-35.669	15.490	-11.570	-445.626	-439.035	-405.615	-424.557	-429.653	-410.711	-274.455	-293.397	-298.493	-279.551	
1269	Under	-189.449	-33.393	14.561	-11.814	-265.229	-280.768	-249.715	-268.178	-271.749	-253.286	-159.487	-177.950	-181.521	-163.058	
	Above	-236.489	-33.393	14.561	-11.814	-331.085	-337.216	-306.163	-324.626	-328.197	-309.734	-201.823	-220.286	-223.857	-205.394	
1270	Under	-189.451	-33.393	18.941	-15.569	-265.231	-280.770	-246.464	-270.621	-275.005	-250.848	-156.236	-180.393	-184.776	-160.619	
	Above	-236.491	-33.393	18.941	-15.569	-331.087	-337.218	-302.912	-327.069	-331.453	-307.296	-198.572	-222.729	-227.112	-202.955	
1271	Under	-271.254	-35.669	12.308	-9.252	-379.756	-382.575	-351.641	-366.733	-370.706	-355.614	-234.596	-249.688	-253.661	-238.569	
	Above	-318.294	-35.669	12.308	-9.252	-445.612	-439.023	-408.089	-423.181	-427.154	-412.062	-276.932	-292.024	-295.997	-280.905	
1272	Under	-196.329	-24.001	24.912	-20.334	-274.861	-273.996	-240.784	-272.456	-278.408	-246.735	-157.884	-189.557	-195.508	-163.836	
	Above	-243.369	-24.001	24.912	-20.334	-340.717	-330.444	-297.232	-328.904	-334.856	-303.183	-200.220	-231.893	-237.844	-206.172	
9	Under	-36.326	-4.374	5.142	-4.577	-50.856	-50.590	-44.196	-51.000	-51.734	-44.931	-28.925	-35.728	-36.462	-29.659	
	Above	-83.366	-4.374	5.142	-4.577	-116.712	-107.038	-100.644	-107.448	-108.182	-101.379	-71.261	-78.064	-78.798	-71.995	
12	Under	-83.361	-4.374	13.336	-12.994	-116.705	-107.032	-94.962	-113.400	-113.845	-95.414	-65.587	-84.018	-84.463	-66.032	
	Above	-36.321	-4.374	13.336												

Attachment VIII.7. Calculation of longitudinal reinforcement biaxial column as-4

Floor	Column No	Column Position	Column Dimension		s	M _{u,x}	M _{c,x}	P _{u,x}		A _{st,x}	Reinforcement installed	s	M _{u,y}	M _{c,y}	P _{u,y}		A _{st,y}	Reinforcement installed	A _{st,total}	Reinforcement installed
			b	h																
			(mm)	(mm)	X direction	(kNm)	(kNm)	(kN)	(%)	(mm ²)	X direction	Y direction	(kNm)	(kNm)	(kN)	(%)	(mm ²)	Y direction	(mm ²)	total
Basement Floor	153	Under	500	700	1.356	115.501	156.617	2581.892	1	3500	10D22	1.606	99.304	159.514	1479.801	1	3500	10D22	7000	20D22
		Above	500	700	1.356	135.618	183.895	2638.340	1			1.606	169.779	272.720	1536.249	1				
	154	Under	500	700	1.356	114.237	154.903	2184.127	1	3500	10D22	1.606	98.023	157.458	1854.592	1	3500	10D22	7000	20D22
		Above	500	700	1.356	135.055	183.131	2240.575	1			1.606	169.193	271.779	1911.040	1				
	155	Under	500	700	1.356	113.711	154.190	2540.748	1	3500	10D22	1.606	97.658	156.870	1448.152	1	3500	10D22	7000	20D22
		Above	500	700	1.356	134.915	182.942	2597.196	1			1.606	168.928	271.353	1504.600	1				
	156	Under	500	700	1.356	115.640	156.805	2217.630	1	3500	10D22	1.606	99.399	159.667	1897.614	1	3500	10D22	7000	20D22
		Above	500	700	1.356	135.651	183.940	2274.078	1			1.606	169.858	272.848	1954.062	1				
	157	Under	500	700	1.356	77.306	104.826	2024.697	1	3500	10D22	1.606	72.085	115.793	1108.673	1	3500	10D22	7000	20D22
		Above	500	700	1.356	122.428	166.010	2081.145	1			1.606	152.190	244.466	1165.121	1				
	158	Under	500	700	1.356	52.366	71.007	3090.947	1	3500	10D22	1.606	40.282	64.706	2390.851	1	3500	10D22	7000	20D22
		Above	500	700	1.356	108.122	146.611	3147.395	1			1.606	140.447	225.604	2447.299	1				
	159	Under	500	700	1.356	50.110	67.948	3070.871	1	3500	10D22	1.606	38.257	61.453	2355.030	1	3500	10D22	7000	20D22
		Above	500	700	1.356	107.256	145.437	3127.319	1			1.606	139.376	223.883	2411.478	1				
	160	Under	500	700	1.356	49.889	67.648	3066.289	1	3500	10D22	1.606	38.108	61.214	2364.834	1	3500	10D22	7000	20D22
		Above	500	700	1.356	107.204	145.366	3122.737	1			1.606	139.256	223.690	2421.282	1				
	161	Under	500	700	1.356	53.051	71.935	3109.287	1	3500	10D22	1.606	40.793	65.526	2377.496	1	3500	10D22	7000	20D22
		Above	500	700	1.356	108.357	146.929	3165.735	1			1.606	140.755	226.098	2433.944	1				
	162	Under	500	700	1.356	77.693	105.350	804.663	1	3500	10D22	1.606	72.368	116.246	1283.655	1	3500	10D22	7000	20D22
		Above	500	700	1.356	122.569	166.201	1425.573	1			1.606	152.355	244.731	1904.566	1				
1st floor	338	Under	500	700	1.357	170.078	230.820	2145.950	1	3500	10D22	1.532	147.464	225.846	1314.586	1	3500	10D22	7000	20D22
		Above	500	700	1.357	166.141	225.477	2202.398	1			1.532	181.542	278.038	1371.034	1				
	339	Under	500	700	1.357	166.126	225.457	1840.550	1	3500	10D22	1.532	143.576	219.892	1592.507	1	3500	10D22	7000	20D22
		Above	500	700	1.357	163.382	221.734	1896.998	1			1.532	178.716	273.709	1648.955	1				
	340	Under	500	700	1.357	165.878	225.120	2107.835	1	3500	10D22	1.532	143.648	220.002	1290.905	1	3500	10D22	7000	20D22
		Above	500	700	1.357	163.182	221.461	2164.283	1			1.532	178.154	272.849	1347.353	1				
	341	Under	500	700	1.357	170.008	230.726	1867.282	1	3500	10D22	1.532	147.282	225.568	1631.151	1	3500	10D22	7000	20D22
		Above	500	700	1.357	166.111	225.437	1923.730	1			1.532	181.642	278.192	1687.599	1				
	342	Under	500	700	1.357	118.948	161.429	1716.888	1	3500	10D22	1.532	106.654	163.344	992.103	1	3500	10D22	7000	20D22
		Above	500	700	1.357	123.776	167.981	1773.336	1			1.532	130.229	199.451	1048.551	1				
	343	Under	500	700	1.357	91.083	123.613	2607.784	1	3500	10D22	1.532	72.516	111.060	2069.250	1	3500	10D22	7000	20D22
		Above	500	700	1.357	84.611	114.829	2664.232	1			1.532	96.475	147.755	2125.698	1				
	344	Under	500	700	1.357	83.484	113.299	2577.107	1	3500	10D22	1.532	65.368	100.113	2026.507	1	3500	10D22	7000	20D22
		Above	500	700	1.357	79.492	107.883	2633.555	1			1.532	91.237	139.733	2082.955	1				
	345	Under	500	700	1.357	83.351	113.119	2567.939	1	3500	10D22	1.532	65.463	100.259	2040.599	1	3500	10D22	7000	20D22
		Above	500	700	1.357	79.407	107.766	2624.387	1			1.532	91.089	139.507	2097.047	1				
	346	Under	500	700	1.357	91.852	124.657	2618.085	1	3500	10D22	1.532	73.129	112.000	2063.636	1	3500	10D22	7000	20D22
		Above	500	700	1.357	85.320	115.791	2674.533	1			1.532	97.265	148.964	2120.084	1				
	347	Under	500	700	1.357	119.763	162.536	725.030	1	3500	10D22	1.532	107.256	164.267	1071.801	1	3500	10D22	7000	20D22
		Above	500	700	1.357	124.337	168.744	1267.064	1			1.532	130.945	200.546	1613.836	1				

2nd floor	523	Under	500	700	1.249	160.460	200.396	1702.020	1	3500	10D22	1.381	148.228	204.723	1153.358	1	3500	10D22	7000	20D22
		Above	500	700	1.249	145.047	181.147	1758.468	1			1.381	156.025	215.491	1209.806	1				
	524	Under	500	700	1.249	154.299	192.701	1494.614	1	3500	10D22	1.381	142.012	196.138	1331.120	1	3500	10D22	7000	20D22
		Above	500	700	1.249	139.551	174.284	1551.062	1			1.381	150.585	207.978	1387.568	1				
	525	Under	500	700	1.249	154.923	193.481	1668.976	1	3500	10D22	1.381	142.559	196.893	1136.759	1	3500	10D22	7000	20D22
		Above	500	700	1.249	139.918	174.742	1725.424	1			1.381	151.000	208.551	1193.207	1				
	526	Under	500	700	1.249	159.914	199.714	1514.614	1	3500	10D22	1.381	147.748	204.059	1363.841	1	3500	10D22	7000	20D22
		Above	500	700	1.249	144.686	180.696	1571.062	1			1.381	155.616	214.927	1420.289	1				
	527	Under	500	700	1.249	118.149	147.555	1397.990	1	3500	10D22	1.381	109.311	150.972	882.389	1	3500	10D22	7000	20D22
		Above	500	700	1.249	104.806	130.891	1454.438	1			1.381	108.848	150.333	938.837	1				
	528	Under	500	700	1.249	89.493	111.767	2122.723	1	3500	10D22	1.381	79.278	109.493	1758.785	1	3500	10D22	7000	20D22
		Above	500	700	1.249	75.718	94.563	2179.171	1			1.381	84.417	116.591	1815.233	1				
	529	Under	500	700	1.249	82.263	102.737	2079.817	1	3500	10D22	1.381	71.928	99.342	1707.470	1	3500	10D22	7000	20D22
		Above	500	700	1.249	68.487	85.532	2136.265	1			1.381	77.284	106.739	1763.918	1				
	530	Under	500	700	1.249	82.465	102.989	2068.303	1	3500	10D22	1.381	72.191	99.705	1723.182	1	3500	10D22	7000	20D22
		Above	500	700	1.249	68.706	85.806	2124.751	1			1.381	77.444	106.960	1779.630	1				
	531	Under	500	700	1.249	89.940	112.325	2127.388	1	3500	10D22	1.381	79.707	110.086	1757.971	1	3500	10D22	7000	20D22
		Above	500	700	1.249	76.207	95.174	2183.836	1			1.381	84.945	117.321	1814.419	1				
	532	Under	500	700	1.249	119.298	148.989	646.224	1	3500	10D22	1.381	110.470	152.573	857.871	1	3500	10D22	7000	20D22
		Above	500	700	1.249	105.754	132.075	1108.425	1			1.381	110.005	151.932	1320.072	1				
3rd floor	708	Under	500	700	1.168	156.116	182.378	1276.576	1	3500	10D22	1.243	145.480	180.796	969.354	1	3500	10D22	7000	20D22
		Above	500	700	1.168	138.352	161.626	1333.024	1			1.243	147.477	183.279	1025.802	1				
	709	Under	500	700	1.168	148.163	173.089	1154.069	1	3500	10D22	1.243	137.469	170.841	1063.916	1	3500	10D22	7000	20D22
		Above	500	700	1.168	130.979	153.013	1210.517	1			1.243	140.160	174.186	1120.364	1				
	710	Under	500	700	1.168	149.260	174.369	1250.150	1	3500	10D22	1.243	138.433	172.039	958.653	1	3500	10D22	7000	20D22
		Above	500	700	1.168	131.791	153.962	1306.598	1			1.243	141.088	175.339	1015.101	1				
	711	Under	500	700	1.168	155.326	181.456	1168.131	1	3500	10D22	1.243	144.778	179.924	1089.331	1	3500	10D22	7000	20D22
		Above	500	700	1.168	137.726	160.895	1224.579	1			1.243	146.766	182.396	1145.779	1				
	712	Under	500	700	1.168	119.471	139.570	1087.852	1	3500	10D22	1.243	114.223	141.951	759.347	1	3500	10D22	7000	20D22
		Above	500	700	1.168	104.349	121.903	1144.300	1			1.243	107.662	133.799	815.795	1				
	713	Under	500	700	1.168	89.462	104.512	1650.955	1	3500	10D22	1.243	80.184	99.650	1438.876	1	3500	10D22	7000	20D22
		Above	500	700	1.168	71.290	83.283	1707.403	1			1.243	78.827	97.963	1495.324	1				
	714	Under	500	700	1.168	82.137	95.955	1594.628	1	3500	10D22	1.243	72.715	90.368	1377.572	1	3500	10D22	7000	20D22
		Above	500	700	1.168	63.816	74.552	1651.076	1			1.243	71.495	88.851	1434.020	1				
	715	Under	500	700	1.168	82.501	96.380	1583.487	1	3500	10D22	1.243	73.135	90.890	1391.896	1	3500	10D22	7000	20D22
		Above	500	700	1.168	64.186	74.983	1639.935	1			1.243	71.804	89.235	1448.344	1				
	716	Under	500	700	1.168	89.668	104.752	1653.332	1	3500	10D22	1.243	80.446	99.975	1439.182	1	3500	10D22	7000	20D22
		Above	500	700	1.168	71.601	83.646	1709.780	1			1.243	79.111	98.316	1495.630	1				
	162	Under	500	700	1.168	121.145	141.524	555.268	1	3500	10D22	1.243	115.585	143.645	657.713	1	3500	10D22	7000	20D22
		Above	500	700	1.168	105.630	123.400	937.185	1			1.243	109.233	135.750	1039.630	1				

4th floor	893	Under	500	700	1.087	145.659	158.340	875.848	1	3500	10D22	1.024	136.830	140.132	755.338	1	3500	10D22	7000	20D22
		Above	500	700	1.087	124.101	134.905	932.296	1			1.024	130.822	133.979	811.786	1				
	894	Under	500	700	1.087	136.480	148.361	821.142	1	3500	10D22	1.024	127.584	130.663	787.470	1	3500	10D22	7000	20D22
		Above	500	700	1.087	115.230	125.261	877.590	1			1.024	122.014	124.958	843.918	1				
	895	Under	500	700	1.087	138.030	150.046	856.975	1	3500	10D22	1.024	128.954	132.065	750.108	1	3500	10D22	7000	20D22
		Above	500	700	1.087	116.444	126.581	913.423	1			1.024	123.389	126.367	806.556	1				
	896	Under	500	700	1.087	144.674	157.269	829.386	1	3500	10D22	1.024	135.951	139.231	804.905	1	3500	10D22	7000	20D22
		Above	500	700	1.087	123.292	134.025	885.834	1			1.024	129.914	133.049	861.353	1				
	897	Under	500	700	1.087	117.845	128.104	793.328	1	3500	10D22	1.024	113.037	115.765	615.846	1	3500	10D22	7000	20D22
		Above	500	700	1.087	97.602	106.099	849.776	1			1.024	99.768	102.175	672.294	1				
	898	Under	500	700	1.087	83.670	90.954	1197.195	1	3500	10D22	1.024	75.483	77.305	1103.503	1	3500	10D22	7000	20D22
		Above	500	700	1.087	61.474	66.825	1253.643	1			1.024	67.276	68.899	1159.951	1				
	899	Under	500	700	1.087	76.981	83.683	1126.085	1	3500	10D22	1.024	68.602	70.258	1031.118	1	3500	10D22	7000	20D22
		Above	500	700	1.087	54.270	58.995	1182.533	1			1.024	60.240	61.694	1087.566	1				
	900	Under	500	700	1.087	77.543	84.293	1116.456	1	3500	10D22	1.024	69.253	70.924	1042.867	1	3500	10D22	7000	20D22
		Above	500	700	1.087	54.831	59.605	1172.904	1			1.024	60.731	62.196	1099.315	1				
	901	Under	500	700	1.087	83.618	90.897	1198.608	1	3500	10D22	1.024	75.590	77.414	1103.595	1	3500	10D22	7000	20D22
		Above	500	700	1.087	61.631	66.996	1255.056	1			1.024	67.315	68.939	1160.043	1				
	902	Under	500	700	1.087	119.760	130.186	450.318	1	3500	10D22	1.024	114.497	117.260	472.617	1	3500	10D22	7000	20D22
		Above	500	700	1.087	99.038	107.660	751.471	1			1.024	101.592	104.043	773.770	1				
5th floor	1078	Under	500	700	1.041	123.909	128.992	520.347	1	3500	10D22	1.365	117.996	161.028	493.026	1	3500	10D22	7000	20D22
		Above	500	700	1.041	104.384	108.666	576.795	1			1.365	107.813	147.132	549.474	1				
	1079	Under	500	700	1.041	113.673	118.336	504.854	1	3500	10D22	1.365	107.734	147.024	495.000	1	3500	10D22	7000	20D22
		Above	500	700	1.041	94.499	98.375	561.302	1			1.365	97.977	133.709	551.448	1				
	1080	Under	500	700	1.041	115.309	120.038	520.124	1	3500	10D22	1.365	109.163	148.975	487.039	1	3500	10D22	7000	20D22
		Above	500	700	1.041	95.962	99.898	576.572	1			1.365	99.641	135.979	543.487	1				
	1081	Under	500	700	1.041	122.974	128.018	513.062	1	3500	10D22	1.365	117.186	159.923	498.523	1	3500	10D22	7000	20D22
		Above	500	700	1.041	103.512	107.757	569.510	1			1.365	106.822	145.779	554.971	1				
	1082	Under	500	700	1.041	117.275	122.085	519.934	1	3500	10D22	1.365	113.587	155.011	446.196	1	3500	10D22	7000	20D22
		Above	500	700	1.041	91.407	95.156	576.382	1			1.365	91.407	124.743	502.644	1				
	1083	Under	500	700	1.041	71.145	74.063	764.667	1	3500	10D22	1.365	65.191	88.966	746.636	1	3500	10D22	7000	20D22
		Above	500	700	1.041	47.613	49.566	821.115	1			1.365	50.844	69.387	803.084	1				
	1084	Under	500	700	1.041	62.752	65.326	677.861	1	3500	10D22	1.365	56.661	77.325	662.688	1	3500	10D22	7000	20D22
		Above	500	700	1.041	40.108	41.753	734.309	1			1.365	43.518	59.388	719.136	1				
	1085	Under	500	700	1.041	63.297	65.893	680.789	1	3500	10D22	1.365	57.278	78.167	662.853	1	3500	10D22	7000	20D22
		Above	500	700	1.041	40.792	42.465	737.237	1			1.365	44.111	60.198	719.301	1				
	1086	Under	500	700	1.041	70.894	73.802	766.683	1	3500	10D22	1.365	65.073	88.804	745.846	1	3500	10D22	7000	20D22
		Above	500	700	1.041	47.584	49.536	823.131	1			1.365	50.650	69.122	802.294	1				
	1087	Under	500	700	1.041	119.186	124.074	298.406	1	3500	10D22	1.365	115.104	157.082	332.859	1	3500	10D22	7000	20D22
		Above	500	700	1.041	92.362	96.150	518.463	1			1.365	93.310	127.340	552.915	1				

6th floor	1263	Under	500	700	1.039	119.547	124.224	213.507	1	3500	10D22	1.054	117.262	123.559	174.661	1	3500	10D22	7000	20D22
		Above	500	700	1.039	90.232	93.762	269.955	1			1.054	90.803	95.678	231.109	1				
	1264	Under	500	700	1.039	108.477	112.720	200.508	1	3500	10D22	1.054	106.037	111.730	186.611	1	3500	10D22	7000	20D22
		Above	500	700	1.039	79.356	82.460	256.956	1			1.054	80.002	84.297	243.059	1				
	1265	Under	500	700	1.039	112.042	116.425	217.701	1	3500	10D22	1.054	109.176	115.038	173.893	1	3500	10D22	7000	20D22
		Above	500	700	1.039	81.556	84.747	274.149	1			1.054	82.512	86.943	230.341	1				
	1266	Under	500	700	1.039	117.500	122.097	199.816	1	3500	10D22	1.054	115.416	121.613	183.353	1	3500	10D22	7000	20D22
		Above	500	700	1.039	88.978	92.459	256.264	1			1.054	89.386	94.185	239.801	1				
	1267	Under	500	700	1.039	84.127	87.418	274.330	1	3500	10D22	1.054	82.682	87.122	246.709	1	3500	10D22	7000	20D22
		Above	500	700	1.039	86.632	90.021	330.778	1			1.054	86.632	91.284	303.157	1				
	1268	Under	500	700	1.039	51.040	53.036	373.205	1	3500	10D22	1.054	47.830	50.398	354.263	1	3500	10D22	7000	20D22
		Above	500	700	1.039	31.549	32.783	429.653	1			1.054	32.681	34.436	410.711	1				
	1269	Under	500	700	1.039	57.326	59.568	271.749	1	3500	10D22	1.054	53.167	56.021	253.286	1	3500	10D22	7000	20D22
		Above	500	700	1.039	28.982	30.116	328.197	1			1.054	30.610	32.254	309.734	1				
	1270	Under	500	700	1.039	58.872	61.175	275.005	1	3500	10D22	1.054	54.878	57.824	250.848	1	3500	10D22	7000	20D22
		Above	500	700	1.039	30.085	31.262	331.453	1			1.054	31.607	33.304	307.296	1				
	1271	Under	500	700	1.039	50.402	52.374	370.706	1	3500	10D22	1.054	47.537	50.089	355.614	1	3500	10D22	7000	20D22
		Above	500	700	1.039	31.299	32.523	427.154	1			1.054	32.216	33.946	412.062	1				
	1272	Under	500	700	1.039	86.730	90.123	157.884	1	3500	10D22	1.054	84.623	89.167	189.557	1	3500	10D22	7000	20D22
		Above	500	700	1.039	86.628	90.017	297.232	1			1.054	86.628	91.280	328.904	1				
	9	Under	500	700	1.039	30.928	32.138	51.734	1	3500	10D22	1.054	29.796	31.396	44.931	1	3500	10D22	7000	20D22
		Above	500	700	1.039	15.689	16.303	108.182	1			1.054	16.439	17.322	101.379	1				
	12	Under	500	700	1.039	15.566	16.175	113.845	1	3500	10D22	1.054	16.036	16.897	95.414	1	3500	10D22	7000	20D22
		Above	500	700	1.039	31.333	32.558	57.397	1			1.054	30.278	31.904	38.966	1				
	1324	Under	500	700	1.039	91.150	94.716	78.033	1	3500	10D22	1.054	90.157	94.998	52.411	1	3500	10D22	7000	20D22
		Above	500	700	1.039	72.991	75.847	134.481	1			1.054	72.991	76.911	108.859	1				
	1331	Under	500	700	1.039	72.896	75.747	124.714	1	3500	10D22	1.054	73.062	76.985	119.257	1	3500	10D22	7000	20D22
		Above	500	700	1.039	90.807	94.359	68.266	1			1.054	89.667	94.481	62.809	1				

Attachment VIII.8. Calculation of the shear force necessary combination of columns as-4 due to load combination

Floor	Column No	Column Position	Shear Force Column (kNm)				Load Combination (kNm)										
			V _D	V _L	V _{Ex}	V _{Ey}	1.4V _D	1.2V _D +1.6V _L	1.2V _D +V _L +2V _E		1.2V _D +V _L -2V _E		0.9V _D +2V _E		0.9V _D -2V _E		
									(V _{Ex} +0.3V _{Ey})	(0.3V _{Ex} +V _{Ey})	(V _{Ex} +0.3V _{Ey})	(0.3V _{Ex} +V _{Ey})	(V _{Ex} +0.3V _{Ey})	(0.3V _{Ex} +V _{Ey})	(V _{Ex} +0.3V _{Ey})	(0.3V _{Ex} +V _{Ey})	
Basement Floor	153	Under	-11.357	-4.811	71.394	-61.227	-15.900	-21.326	87.612	-98.057	-124.491	61.178	95.831	-89.839	-116.273	69.396	
		Above	-11.357	-4.811	71.394	-61.227	-15.900	-21.326	87.612	-98.057	-124.491	61.178	95.831	-89.839	-116.273	69.396	
	154	Under	10.798	4.997	71.427	-61.255	15.117	20.953	124.056	-61.699	-88.146	97.608	115.819	-69.936	-96.383	89.372	
		Above	10.798	4.997	71.427	-61.255	15.117	20.953	124.056	-61.699	-88.146	97.608	115.819	-69.936	-96.383	89.372	
	155	Under	-10.796	-4.997	71.170	-61.044	-15.114	-20.950	87.761	-97.338	-123.666	61.434	95.997	-89.102	-115.430	69.670	
		Above	-10.796	-4.997	71.170	-61.044	-15.114	-20.950	87.761	-97.338	-123.666	61.434	95.997	-89.102	-115.430	69.670	
	156	Under	11.358	4.811	71.462	-61.282	15.901	21.327	124.595	-61.246	-87.714	98.127	116.377	-69.465	-95.933	89.909	
		Above	11.358	4.811	71.462	-61.282	15.901	21.327	124.595	-61.246	-87.714	98.127	116.377	-69.465	-95.933	89.909	
	157	Under	12.968	4.748	50.066	-42.990	18.155	23.158	94.648	-35.631	-54.028	76.250	86.009	-44.269	-62.667	67.612	
		Above	12.968	4.748	50.066	-42.990	18.155	23.158	94.648	-35.631	-54.028	76.250	86.009	-44.269	-62.667	67.612	
	158	Under	0.447	0.654	63.502	-54.494	0.626	1.583	95.498	-69.696	-93.117	72.077	94.710	-70.485	-93.905	71.289	
		Above	0.447	0.654	63.502	-54.494	0.626	1.583	95.498	-69.696	-93.117	72.077	94.710	-70.485	-93.905	71.289	
	159	Under	0.358	0.222	63.118	-54.174	0.501	0.785	94.383	-69.826	-93.080	71.129	94.054	-70.155	-93.409	70.799	
		Above	0.358	0.222	63.118	-54.174	0.501	0.785	94.383	-69.826	-93.080	71.129	94.054	-70.155	-93.409	70.799	
	160	Under	-0.357	-0.222	63.010	-54.087	-0.500	-0.784	92.917	-71.018	-94.218	69.718	93.247	-70.689	-93.889	70.047	
		Above	-0.357	-0.222	63.010	-54.087	-0.500	-0.784	92.917	-71.018	-94.218	69.718	93.247	-70.689	-93.889	70.047	
	161	Under	-0.445	-0.654	63.839	-54.781	-0.623	-1.580	93.621	-72.447	-95.997	70.071	94.409	-71.659	-95.210	70.858	
		Above	-0.445	-0.654	63.839	-54.781	-0.623	-1.580	93.621	-72.447	-95.997	70.071	94.409	-71.659	-95.210	70.858	
	1st floor	162	Under	-12.967	-4.748	50.253	-43.149	-18.154	-23.157	54.308	-76.455	-94.925	35.838	62.946	-67.817	-86.287	44.476
			Above	-12.967	-4.748	50.253	-43.149	-18.154	-23.157	54.308	-76.455	-94.925	35.838	62.946	-67.817	-86.287	44.476
338		Under	-21.072	-8.849	73.680	-66.369	-29.501	-39.445	73.403	-122.665	-141.674	54.395	88.574	-107.495	-126.503	69.565	
		Above	-21.072	-8.849	73.680	-66.369	-29.501	-39.445	73.403	-122.665	-141.674	54.395	88.574	-107.495	-126.503	69.565	
339		Under	19.408	9.047	73.841	-66.556	27.171	37.765	140.085	-56.471	-75.412	121.144	125.216	-71.340	-90.281	106.275	
		Above	19.408	9.047	73.841	-66.556	27.171	37.765	140.085	-56.471	-75.412	121.144	125.216	-71.340	-90.281	106.275	
340		Under	-19.402	-9.047	73.618	-66.464	-27.163	-37.758	75.028	-121.087	-139.687	56.428	89.896	-106.219	-124.819	71.295	
		Above	-19.402	-9.047	73.618	-66.464	-27.163	-37.758	75.028	-121.087	-139.687	56.428	89.896	-106.219	-124.819	71.295	
341		Under	21.078	8.849	73.661	-66.304	29.509	39.452	141.682	-54.269	-73.397	122.554	126.510	-69.441	-88.569	107.382	
		Above	21.078	8.849	73.661	-66.304	29.509	39.452	141.682	-54.269	-73.397	122.554	126.510	-69.441	-88.569	107.382	
342		Under	23.884	8.800	33.447	-30.019	33.438	42.741	86.343	-2.509	-11.422	77.431	70.378	-18.474	-27.387	61.465	
		Above	23.884	8.800	33.447	-30.019	33.438	42.741	86.343	-2.509	-11.422	77.431	70.378	-18.474	-27.387	61.465	
343		Under	1.600	1.558	59.230	-53.655	2.240	4.413	89.745	-68.294	-82.789	75.250	87.707	-70.332	-84.827	73.212	
		Above	1.600	1.558	59.230	-53.655	2.240	4.413	89.745	-68.294	-82.789	75.250	87.707	-70.332	-84.827	73.212	
344		Under	0.058	0.216	58.989	-53.608	0.081	0.415	86.099	-71.537	-85.528	72.108	85.865	-71.770	-85.761	71.875	
		Above	0.058	0.216	58.989	-53.608	0.081	0.415	86.099	-71.537	-85.528	72.108	85.865	-71.770	-85.761	71.875	
345		Under	-0.053	-0.216	58.887	-53.591	-0.074	-0.409	85.340	-72.129	-85.899	71.570	85.572	-71.898	-85.667	71.802	
		Above	-0.053	-0.216	58.887	-53.591	-0.074	-0.409	85.340	-72.129	-85.899	71.570	85.572	-71.898	-85.667	71.802	
346		Under	-1.595	-1.558	59.798	-54.155	-2.233	-4.407	83.631	-75.903	-90.575	68.959	85.668	-73.867	-88.539	70.996	
		Above	-1.595	-1.558	59.798	-54.155	-2.233	-4.407	83.631	-75.903	-90.575	68.959	85.668	-73.867	-88.539	70.996	
2nd floor	347	Under	-23.881	-8.800	33.950	-30.505	-33.433	-42.737	12.140	-78.097	-87.054	3.183	28.104	-62.133	-71.090	19.147	
		Above	-23.881	-8.800	33.950	-30.505	-33.433	-42.737	12.140	-78.097	-87.054	3.183	28.104	-62.133	-71.090	19.147	
	523	Under	-20.147	-8.329	64.680	-60.217	-28.206	-37.503	60.724	-114.131	-125.735	49.121	75.098	-99.758	-111.362	63.494	
		Above	-20.147	-8.329	64.680	-60.217	-28.206	-37.503	60.724	-114.131	-125.735	49.121	75.098	-99.758	-111.362	63.494	
	524	Under	17.572	8.288	65.001	-60.516	24.601	34.347	123.067	-52.657	-64.318	111.406	109.507	-66.217	-77.878	97.846	
		Above	17.572	8.288	65.001	-60.516	24.601	34.347	123.067	-52.657	-64.318	111.406	109.507	-66.217	-77.878	97.846	
	525	Under	-17.564	-8.288	65.376	-60.867	-24.590	-34.338	64.867	-111.873	-123.597	53.144	78.424	-98.316	-110.039	66.701	
		Above	-17.564	-8.288	65.376	-60.867	-24.590	-34.338	64.867	-111.873	-123.597	53.144	78.424	-98.316	-110.039	66.701	
	526	Under	20.155	8.329	64.335	-59.893	28.217	37.512	125.249	-48.670	-60.219	113.700	110.874	-63.046	-74.595	99.325	
		Above	20.155	8.329	64.335	-59.893	28.217	37.512	125.249	-48.670	-60.219	113.700	110.874	-63.046	-74.595	99.325	
	527	Under	22.876	8.502	28.043	-26.170	32.026	41.054	76.337	0.439	-4.431	71.467	60.972	-14.926	-19.796	56.103	
		Above	22.876	8.502	28.043	-26.170	32.026	41.054	76.337	0.439	-4.431	71.467	60.972	-14.926	-19.796	56.103	
	528	Under	2.646	2.006	53.151	-49.513	3.704	6.385	81.775	-61.954	-71.413	72.317	78.976	-64.754	-74.213	69.517	
		Above	2.646	2.006	53.151	-49.513	3.704	6.385	81.775	-61.954	-71.413	72.317	78.976	-64.754	-74.213	69.517	
	529	Under	-0.859	-0.074	53.827	-50.147	-1.203	-1.149	76.461	-69.103	-78.671	66.893	76.793	-68.771	-78.339	67.225	
		Above	-0.859	-0.074	53.827	-50.147	-1.203	-1.149	76.461	-69.103	-78.671	66.893	76.793	-68.771	-78.339	67.225	
	530	Under	0.866	0.074	53.953	-50.297	1.212	1.158	78.841	-67.109	-76.615	69.335	78.507	-67.443	-76.948	69.002	
		Above	0.866	0.074	53.953	-50.297	1.212	1.158	78.841	-67.109	-76.615	69.335	78.507	-67.443	-76.948	69.002	
	531	Under	-2.638	-2.006	53.506	-49.858	-3.693	-6.375	71.926	-72.784	-82.269	62.441	74.723	-69.987	-79.471	65.238	
		Above	-2.638	-2.006	53.506	-49.858	-3.693	-6.375	71.926	-72.784	-82.269	62.441	74.723	-69.987	-79.471	65.238	
532	Under	-22.872	-8.502	28.905	-26.945	-32.021	-41.050	5.695	-72.495	-77.591	0.599	21.058	-57.132	-62.228	15.962		
	Above	-22.872	-8.502	28.905	-26.945	-32.021	-41.050	5.695	-72.495	-77.591	0.599	21.058	-57.132	-62.228	15.962		
3rd floor	708	Under	-20.986	-8.632	58.490	-54.690	-29.380	-38.994	50.351	-108.101	-117.981	40.471	65.279	-93.173	-103.053	55.399	
		Above	-20.986	-8.632	58.490	-54.690	-29.380	-38.994	50.351	-108.101	-117.981	40.471	65.279	-93.173	-103.053	55.399	
	709	Under	17.744	8.457	58.835	-55.012	24.842	34.824	114.413	-44.973	-54.913	104.473	100.632	-58.753	-68.693	90.693	
		Above	17.744	8.457	58.835	-55.012	24.842	34.824	114.413	-44.973	-54.913	104.473	100.632	-58.753	-68.693	90.693	
	710	Under	-17.733	-8.457	59.556												

4th floor	893	Under	-21.580	-8.679	48.070	-45.080	-30.212	-39.782	34.517	-95.893	-103.667	26.743	49.670	-80.740	-88.514	41.896
		Above	-21.580	-8.679	48.070	-45.080	-30.212	-39.782	34.517	-95.893	-103.667	26.743	49.670	-80.740	-88.514	41.896
	894	Under	17.854	8.374	48.458	-45.443	24.996	34.823	99.449	-32.012	-39.851	91.610	85.719	-45.743	-53.582	77.880
		Above	17.854	8.374	48.458	-45.443	24.996	34.823	99.449	-32.012	-39.851	91.610	85.719	-45.743	-53.582	77.880
	895	Under	-17.840	-8.374	49.498	-46.417	-24.976	-34.806	41.364	-92.917	-100.928	33.353	55.090	-79.191	-87.202	47.079
		Above	-17.840	-8.374	49.498	-46.417	-24.976	-34.806	41.364	-92.917	-100.928	33.353	55.090	-79.191	-87.202	47.079
	896	Under	21.593	8.679	47.388	-44.437	30.230	39.798	102.704	-25.851	-33.523	95.032	87.548	-41.008	-48.680	79.875
		Above	21.593	8.679	47.388	-44.437	30.230	39.798	102.704	-25.851	-33.523	95.032	87.548	-41.008	-48.680	79.875
	897	Under	24.672	9.142	21.789	-20.448	34.541	44.234	70.058	10.926	7.439	66.571	53.514	-5.618	-9.104	50.027
		Above	24.672	9.142	21.789	-20.448	34.541	44.234	70.058	10.926	7.439	66.571	53.514	-5.618	-9.104	50.027
	898	Under	3.858	2.641	42.369	-39.679	5.401	8.855	68.201	-46.666	-53.660	61.207	64.403	-50.464	-57.458	57.409
		Above	3.858	2.641	42.369	-39.679	5.401	8.855	68.201	-46.666	-53.660	61.207	64.403	-50.464	-57.458	57.409
	899	Under	-1.942	-0.357	43.985	-41.226	-2.719	-2.902	60.547	-58.748	-65.922	53.374	61.487	-57.809	-64.982	54.313
		Above	-1.942	-0.357	43.985	-41.226	-2.719	-2.902	60.547	-58.748	-65.922	53.374	61.487	-57.809	-64.982	54.313
	900	Under	1.954	0.357	44.353	-41.624	2.736	2.916	66.433	-53.934	-61.030	59.338	65.490	-54.878	-61.973	58.395
		Above	1.954	0.357	44.353	-41.624	2.736	2.916	66.433	-53.934	-61.030	59.338	65.490	-54.878	-61.973	58.395
	901	Under	-3.847	-2.641	42.405	-39.768	-5.386	-8.842	53.692	-61.350	-68.207	46.836	57.487	-57.555	-64.412	50.631
		Above	-3.847	-2.641	42.405	-39.768	-5.386	-8.842	53.692	-61.350	-68.207	46.836	57.487	-57.555	-64.412	50.631
	902	Under	-24.667	-9.142	23.064	-21.561	-34.534	-44.228	-5.551	-68.026	-71.934	-9.459	10.991	-51.484	-55.392	7.083
		Above	-24.667	-9.142	23.064	-21.561	-34.534	-44.228	-5.551	-68.026	-71.934	-9.459	10.991	-51.484	-55.392	7.083
5th floor	1078	Under	-20.646	-9.009	33.725	-31.928	-28.904	-39.190	14.509	-77.405	-82.077	9.837	29.712	-62.202	-66.875	25.040
		Above	-20.646	-9.009	33.725	-31.928	-28.904	-39.190	14.509	-77.405	-82.077	9.837	29.712	-62.202	-66.875	25.040
	1079	Under	16.573	8.683	33.998	-32.187	23.202	33.780	77.254	-15.405	-20.113	72.546	63.600	-29.060	-33.768	58.891
		Above	16.573	8.683	33.998	-32.187	23.202	33.780	77.254	-15.405	-20.113	72.546	63.600	-29.060	-33.768	58.891
	1080	Under	-16.560	-8.683	35.166	-33.276	-23.184	-33.765	21.811	-74.007	-78.921	16.897	35.462	-60.356	-65.270	30.548
		Above	-16.560	-8.683	35.166	-33.276	-23.184	-33.765	21.811	-74.007	-78.921	16.897	35.462	-60.356	-65.270	30.548
	1081	Under	20.659	9.009	33.034	-31.285	28.923	39.205	81.097	-8.950	-13.497	76.549	65.890	-24.157	-28.704	61.343
		Above	20.659	9.009	33.034	-31.285	28.923	39.205	81.097	-8.950	-13.497	76.549	65.890	-24.157	-28.704	61.343
	1082	Under	25.472	9.928	16.320	-15.517	35.661	46.451	63.824	19.252	17.165	61.736	46.255	1.683	-0.405	44.167
		Above	25.472	9.928	16.320	-15.517	35.661	46.451	63.824	19.252	17.165	61.736	46.255	1.683	-0.405	44.167
	1083	Under	3.972	2.765	32.052	-30.286	5.561	9.190	53.464	-33.809	-38.401	48.872	49.507	-37.766	-42.358	44.916
		Above	3.972	2.765	32.052	-30.286	5.561	9.190	53.464	-33.809	-38.401	48.872	49.507	-37.766	-42.358	44.916
	1084	Under	-2.218	-0.321	32.910	-31.083	-3.105	-3.175	44.188	-45.403	-50.153	39.437	45.174	-44.416	-49.166	40.424
		Above	-2.218	-0.321	32.910	-31.083	-3.105	-3.175	44.188	-45.403	-50.153	39.437	45.174	-44.416	-49.166	40.424
	1085	Under	2.229	0.321	33.311	-31.515	3.121	3.188	50.709	-40.048	-44.717	46.039	49.719	-41.037	-45.707	45.050
		Above	2.229	0.321	33.311	-31.515	3.121	3.188	50.709	-40.048	-44.717	46.039	49.719	-41.037	-45.707	45.050
	1086	Under	-3.958	-2.765	31.942	-30.233	-5.541	-9.174	38.230	-48.815	-53.259	33.786	42.182	-44.863	-49.306	37.739
		Above	-3.958	-2.765	31.942	-30.233	-5.541	-9.174	38.230	-48.815	-53.259	33.786	42.182	-44.863	-49.306	37.739
	1087	Under	-25.463	-9.928	17.643	-16.676	-35.648	-46.440	-15.203	-63.250	-65.764	-17.717	2.364	-45.683	-48.197	-0.151
		Above	-25.463	-9.928	17.643	-16.676	-35.648	-46.440	-15.203	-63.250	-65.764	-17.717	2.364	-45.683	-48.197	-0.151
6th floor	1263	Under	-27.411	-7.788	16.773	-16.224	-38.375	-45.354	-16.870	-63.065	-64.493	-18.297	-0.858	-47.054	-48.482	-2.286
		Above	-27.411	-7.788	16.773	-16.224	-38.375	-45.354	-16.870	-63.065	-64.493	-18.297	-0.858	-47.054	-48.482	-2.286
	1264	Under	23.048	7.073	17.444	-16.851	32.267	38.974	59.508	11.495	9.953	57.966	45.521	-2.492	-4.034	43.979
		Above	23.048	7.073	17.444	-16.851	32.267	38.974	59.508	11.495	9.953	57.966	45.521	-2.492	-4.034	43.979
	1265	Under	-23.027	-7.073	19.590	-18.855	-32.238	-38.949	-6.838	-60.661	-62.572	-8.749	7.143	-46.680	-48.591	5.232
		Above	-23.027	-7.073	19.590	-18.855	-32.238	-38.949	-6.838	-60.661	-62.572	-8.749	7.143	-46.680	-48.591	5.232
	1266	Under	27.433	7.788	15.530	-15.051	38.406	45.380	62.737	19.924	18.678	61.492	46.719	3.906	2.660	45.474
		Above	27.433	7.788	15.530	-15.051	38.406	45.380	62.737	19.924	18.678	61.492	46.719	3.906	2.660	45.474
	1267	Under	24.118	7.120	5.378	-5.231	33.765	40.334	43.679	28.826	28.444	43.297	29.324	14.471	14.089	28.941
		Above	24.118	7.120	5.378	-5.231	33.765	40.334	43.679	28.826	28.444	43.297	29.324	14.471	14.089	28.941
	1268	Under	4.917	2.839	17.058	-16.223	6.884	10.443	33.122	-13.472	-15.643	30.951	28.808	-17.786	-19.957	26.637
		Above	4.917	2.839	17.058	-16.223	6.884	10.443	33.122	-13.472	-15.643	30.951	28.808	-17.786	-19.957	26.637
	1269	Under	-3.444	-0.883	23.764	-22.651	-4.822	-5.546	28.922	-36.059	-38.953	26.028	30.838	-34.143	-37.037	27.944
		Above	-3.444	-0.883	23.764	-22.651	-4.822	-5.546	28.922	-36.059	-38.953	26.028	30.838	-34.143	-37.037	27.944
	1270	Under	3.466	0.883	24.657	-23.596	4.852	5.572	40.199	-27.356	-30.114	37.440	38.276	-29.278	-32.037	35.517
		Above	3.466	0.883	24.657	-23.596	4.852	5.572	40.199	-27.356	-30.114	37.440	38.276	-29.278	-32.037	35.517
	1271	Under	-4.915	-2.839	16.713	-15.986	-6.881	-10.440	15.097	-30.681	-32.571	13.207	19.411	-26.368	-28.258	17.521
		Above	-4.915	-2.839	16.713	-15.986	-6.881	-10.440	15.097	-30.681	-32.571	13.207	19.411	-26.368	-28.258	17.521
	1272	Under	-24.126	-7.120	6.988	-6.620	-33.776	-40.343	-26.067	-45.118	-46.075	-27.024	-11.709	-30.761	-31.717	-12.666
		Above	-24.126	-7.120	6.988	-6.620	-33.776	-40.343	-26.067	-45.118	-46.075	-27.024	-11.709	-30.761	-31.717	-12.666
	9	Under	-3.720	1.643	9.993	-9.631	-5.208	-1.835	11.386	-16.087	-17.028	10.445	10.859	-16.614	-17.555	9.918
		Above	-3.720	1.643	9.993	-9.631	-5.208	-1.835	11.386	-16.087	-17.028	10.445	10.859	-16.614	-17.555	9.918
	12	Under	-3.759	1.643	9.744	-10.037	-5.263	-1.882	10.598	-17.095	-16.334	11.360	10.083	-17.611	-16.849	10.845
		Above	-3.759	1.643	9.744	-10.037	-5.263	-1.882	10.598	-17.095	-16.334	11.360	10.083	-17.611	-16.849	10.845
	1324	Under	25.179	5.464	7.146	-7.000	35.251	38.957	45.771	25.966	25.587	45.391	32.753	12.949	12.569	32.374
		Above	25.179	5.464	7.146	-7.000	35.251	38.957	45.771	25.966	25.587	45.391	32.753	12.949	12.569	32.374
	1331	Under	25.144	5.464	7.229	-7.499	35.202	38.915	45.595	24.976	25.678	46.297	32.588	11.969	12.671	33.290
Above		25.144	5.464	7.229	-7.499	35.202	38.915	45.595	24.976	25.678	46.297	32.588	11.969			

Attachment VIII.9. Calculation of shear reinforcement as-4 column

Floor	Column No	Column Position	Column Dimension		P _{u,k}	V _{u,k}	reinforcement shear area		Begel installed	
			b	h			plastic hinge	out plastic hinge	plastic hinge	out plastic hinge
			(mm)	(mm)			(kN)	(kNm)		
Basement Floor	153	Under	500	700	2581.892	124.491	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	2638.340	124.491				
	154	Under	500	700	2184.127	124.056	713.180	713.180	-	2dp10-220
		Above	500	700	2240.575	124.056				
	155	Under	500	700	2540.748	123.666	713.180	713.180	-	2dp10-240
		Above	500	700	2597.196	123.666				
	156	Under	500	700	2217.630	124.595	713.180	713.180	-	2dp10-240
		Above	500	700	2274.078	124.595				
	157	Under	500	700	2024.697	94.648	713.180	713.180	-	2dp10-240
		Above	500	700	2081.145	94.648				
	158	Under	500	700	3090.947	95.498	713.180	713.180	-	2dp10-240
		Above	500	700	3147.395	95.498				
	159	Under	500	700	3070.871	94.383	713.180	713.180	-	2dp10-240
		Above	500	700	3127.319	94.383				
	160	Under	500	700	3066.289	94.218	713.180	713.180	-	2dp10-220
		Above	500	700	3122.737	94.218				
	161	Under	500	700	3109.287	95.997	713.180	713.180	-	2dp10-220
		Above	500	700	3165.735	95.997				
	162	Under	500	700	1369.125	94.925	713.180	713.180	-	2dp10-240
		Above	500	700	1425.573	94.925				
1st floor	338	Under	500	700	2145.950	141.674	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	2202.398	141.674				
	339	Under	500	700	1840.550	140.085	713.180	713.180	-	2dp10-220
		Above	500	700	1896.998	140.085				
	340	Under	500	700	2107.835	139.687	713.180	713.180	-	2dp10-240
		Above	500	700	2164.283	139.687				
	341	Under	500	700	1867.282	141.682	713.180	713.180	-	2dp10-240
		Above	500	700	1923.730	141.682				
	342	Under	500	700	1716.888	86.343	713.180	713.180	-	2dp10-240
		Above	500	700	1773.336	86.343				
	343	Under	500	700	2607.784	89.745	713.180	713.180	-	2dp10-240
		Above	500	700	2664.232	89.745				
	344	Under	500	700	2577.107	86.099	713.180	713.180	-	2dp10-240
		Above	500	700	2633.555	86.099				
	345	Under	500	700	2567.939	85.899	713.180	713.180	-	2dp10-220
		Above	500	700	2624.387	85.899				
	346	Under	500	700	2618.085	90.575	713.180	713.180	-	2dp10-220
		Above	500	700	2674.533	90.575				
347	Under	500	700	1210.616	87.054	713.180	713.180	-	2dp10-240	
	Above	500	700	1267.064	87.054					

2nd floor	523	Under	500	700	1702.020	125.735	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	1758.468	125.735				
	524	Under	500	700	1494.614	123.067	713.180	713.180	-	2dp10-220
		Above	500	700	1551.062	123.067				
	525	Under	500	700	1668.976	123.597	713.180	713.180	-	2dp10-240
		Above	500	700	1725.424	123.597				
	526	Under	500	700	1514.614	125.249	713.180	713.180	-	2dp10-240
		Above	500	700	1571.062	125.249				
	527	Under	500	700	1397.990	76.337	713.180	713.180	-	2dp10-240
		Above	500	700	1454.438	76.337				
	528	Under	500	700	2122.723	81.775	713.180	713.180	-	2dp10-240
		Above	500	700	2179.171	81.775				
	529	Under	500	700	2079.817	78.671	713.180	713.180	-	2dp10-240
		Above	500	700	2136.265	78.671				
	530	Under	500	700	2068.303	78.841	713.180	713.180	-	2dp10-220
		Above	500	700	2124.751	78.841				
	531	Under	500	700	2127.388	82.269	713.180	713.180	-	2dp10-220
		Above	500	700	2183.836	82.269				
	532	Under	500	700	1051.977	77.591	713.180	713.180	-	2dp10-240
		Above	500	700	1108.425	77.591				
3rd floor	708	Under	500	700	1276.576	117.981	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	1333.024	117.981				
	709	Under	500	700	1154.069	114.413	713.180	713.180	-	2dp10-220
		Above	500	700	1210.517	114.413				
	710	Under	500	700	1250.150	115.437	713.180	713.180	-	2dp10-240
		Above	500	700	1306.598	115.437				
	711	Under	500	700	1168.131	117.219	713.180	713.180	-	2dp10-240
		Above	500	700	1224.579	117.219				
	712	Under	500	700	1087.852	75.489	713.180	713.180	-	2dp10-240
		Above	500	700	1144.300	75.489				
	713	Under	500	700	1650.955	77.827	713.180	713.180	-	2dp10-240
		Above	500	700	1707.403	77.827				
	714	Under	500	700	1594.628	74.915	713.180	713.180	-	2dp10-240
		Above	500	700	1651.076	74.915				
	715	Under	500	700	1583.487	75.240	713.180	713.180	-	2dp10-220
		Above	500	700	1639.935	75.240				
	716	Under	500	700	1653.332	78.084	713.180	713.180	-	2dp10-220
		Above	500	700	1709.780	78.084				
	162	Under	500	700	880.737	77.118	713.180	713.180	-	2dp10-240
		Above	500	700	937.185	77.118				

4th floor	893	Under	500	700	875.848	103.667	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	932.296	103.667				
	894	Under	500	700	821.142	99.449	713.180	713.180	-	2dp10-220
		Above	500	700	877.590	99.449				
	895	Under	500	700	856.975	100.928	713.180	713.180	-	2dp10-240
		Above	500	700	913.423	100.928				
	896	Under	500	700	829.386	102.704	713.180	713.180	-	2dp10-240
		Above	500	700	885.834	102.704				
	897	Under	500	700	793.328	70.058	713.180	713.180	-	2dp10-240
		Above	500	700	849.776	70.058				
	898	Under	500	700	1197.195	68.201	713.180	713.180	-	2dp10-240
		Above	500	700	1253.643	68.201				
	899	Under	500	700	1126.085	65.922	713.180	713.180	-	2dp10-240
		Above	500	700	1182.533	65.922				
	900	Under	500	700	1116.456	66.433	713.180	713.180	-	2dp10-220
		Above	500	700	1172.904	66.433				
	901	Under	500	700	1198.608	68.207	713.180	713.180	-	2dp10-220
		Above	500	700	1255.056	68.207				
	902	Under	500	700	695.023	71.934	713.180	713.180	-	2dp10-240
		Above	500	700	751.471	71.934				
5th floor	1078	Under	500	700	520.347	82.077	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	576.795	82.077				
	1079	Under	500	700	504.854	77.254	713.180	713.180	-	2dp10-220
		Above	500	700	561.302	77.254				
	1080	Under	500	700	520.124	78.921	713.180	713.180	-	2dp10-240
		Above	500	700	576.572	78.921				
	1081	Under	500	700	513.062	81.097	713.180	713.180	-	2dp10-240
		Above	500	700	569.510	81.097				
	1082	Under	500	700	519.934	63.824	713.180	713.180	-	2dp10-240
		Above	500	700	576.382	63.824				
	1083	Under	500	700	764.667	53.464	713.180	713.180	-	2dp10-240
		Above	500	700	821.115	53.464				
	1084	Under	500	700	677.861	50.153	713.180	713.180	-	2dp10-240
		Above	500	700	734.309	50.153				
	1085	Under	500	700	680.789	50.709	713.180	713.180	-	2dp10-220
		Above	500	700	737.237	50.709				
	1086	Under	500	700	766.683	53.259	713.180	713.180	-	2dp10-220
		Above	500	700	823.131	53.259				
	1087	Under	500	700	462.015	65.764	713.180	713.180	-	2dp10-240
		Above	500	700	518.463	65.764				

6th floor	1263	Under	500	700	213.507	64.493	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	269.955	64.493				
	1264	Under	500	700	200.508	59.508	713.180	713.180	-	2dp10-220
		Above	500	700	256.956	59.508				
	1265	Under	500	700	217.701	62.572	713.180	713.180	-	2dp10-240
		Above	500	700	274.149	62.572				
	1266	Under	500	700	199.816	62.737	713.180	713.180	-	2dp10-240
		Above	500	700	256.264	62.737				
	1267	Under	500	700	274.330	43.679	713.180	713.180	-	2dp10-240
		Above	500	700	330.778	43.679				
	1268	Under	500	700	373.205	33.122	713.180	713.180	-	2dp10-240
		Above	500	700	429.653	33.122				
	1269	Under	500	700	271.749	38.953	713.180	713.180	-	2dp10-240
		Above	500	700	328.197	38.953				
	1270	Under	500	700	275.005	40.199	713.180	713.180	-	2dp10-220
		Above	500	700	331.453	40.199				
	1271	Under	500	700	370.706	32.571	713.180	713.180	-	2dp10-220
		Above	500	700	427.154	32.571				
	1272	Under	500	700	240.784	46.075	713.180	713.180	-	2dp10-240
		Above	500	700	297.232	46.075				
	9	Under	500	700	51.734	17.555	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	108.182	17.555				
	12	Under	500	700	113.845	16.849	713.180	713.180	-	2dp10-220
		Above	500	700	57.397	16.849				
	1324	Under	500	700	78.033	45.771	713.180	713.180	-	2dp10-240
		Above	500	700	134.481	45.771				
	1331	Under	500	700	124.714	45.595	713.180	713.180	-	2dp10-240
		Above	500	700	68.266	45.595				

Attachment VIII.1. The calculation of the AS-E beam combination necessary moment due to the load combination

Floor	Beam No	Beam Position	Moment Beam (kNm)				Load Combination (kNm)									
			M _D	M _L	M _{E_x}	M _{E_y}	1,4M _D	1,2M _D +1,6M _L	1,2M _D +1M _L +1M _E		1,2M _D +1M _L -1M _E		0,9M _D +1M _E		0,9M _D -1M _E	
									(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})	(M _{E_x} +0,3M _{E_y})	(0,3M _{E_x} +M _{E_y})
1st floor	30	Left support	-78.175	-34.115	157.514	-141.457	-109.445	-148.395	-12.849	-222.129	-243.002	-33.722	44.719	-164.561	-185.434	23.846
		Field	53.617	23.901	0.073	-0.097	75.064	102.582	88.285	88.167	88.197	88.316	48.299	48.181	48.212	48.330
	59	Right support	-79.424	-34.804	137.797	-153.157	-111.194	-150.995	-38.263	-241.931	-221.963	-18.295	20.368	-183.300	-163.332	40.336
		Left support	-78.897	-34.471	158.346	-142.217	-110.456	-149.831	-13.467	-223.861	-244.829	-34.435	44.674	-165.721	-186.689	23.706
	93	Field	53.817	23.935	0.480	-0.578	75.344	102.876	88.823	88.082	88.208	88.949	48.743	48.002	48.128	48.869
		Right support	-78.384	-34.213	139.064	-154.523	-109.738	-148.801	-35.566	-241.077	-220.981	-15.470	22.162	-183.349	-163.253	42.258
	35	Left support	-68.580	-24.216	179.834	-160.047	-96.013	-121.042	25.308	-212.609	-238.332	-0.416	70.098	-167.819	-193.542	44.374
		Field	43.276	15.032	8.406	-7.307	60.587	75.982	73.176	62.178	60.749	71.748	45.162	34.163	32.735	43.734
	61	Right support	-68.474	-24.269	140.466	-157.466	-95.864	-121.000	-13.212	-221.764	-199.665	8.888	31.600	-176.953	-154.854	53.699
		Left support	-21.790	-8.489	274.735	-240.329	-30.507	-39.730	167.999	-192.546	-237.273	123.271	183.025	-177.520	-222.247	138.297
	83	Field	2.495	0.460	12.789	-14.315	3.493	3.730	11.948	-7.024	-5.040	13.932	10.740	-8.233	-6.249	12.724
		Right support	-1.606	-0.609	257.504	-293.801	-2.248	-2.902	166.828	-219.086	-171.901	214.013	167.919	-217.995	-170.809	215.104
	220	Left support	-17.152	-7.017	228.725	-261.625	-24.013	-31.810	122.638	-220.607	-177.837	165.408	134.801	-208.445	-165.674	177.571
		Field	-4.437	-2.400	1.621	-1.406	-6.212	-9.165	-6.525	-8.644	-8.924	-6.805	-2.794	-4.912	-5.193	-3.074
	228	Right support	-17.389	-7.008	264.104	-230.864	-24.344	-32.079	166.971	-179.507	-222.719	123.758	179.195	-167.283	-120.495	135.983
		Left support	-16.650	-6.617	262.902	-229.888	-23.311	-30.568	167.338	-177.615	-220.533	124.420	178.950	-166.003	-208.921	136.032
	249	Field	-3.595	-1.474	2.359	-2.771	-5.033	-6.673	-4.261	-7.852	-7.315	-3.724	-1.708	-5.299	-4.763	-1.172
		Right support	-17.013	-6.474	228.000	-260.847	-23.818	-30.774	122.856	-219.337	-176.636	165.558	134.435	-207.759	-165.058	177.136
2nd floor	220	Left support	-79.364	-34.495	186.400	-173.465	-111.110	-150.429	4.628	-247.277	-264.093	-12.187	62.933	-188.973	-205.788	46.117
		Field	53.202	23.675	0.395	-0.485	74.482	101.721	87.766	87.150	87.268	87.883	48.130	47.515	47.632	48.248
	228	Right support	-79.097	-34.773	171.264	-184.019	-110.736	-150.554	-13.631	-262.330	-245.748	2.950	44.871	-203.828	-187.264	61.453
		Left support	-79.476	-34.204	176.534	-189.938	-111.266	-150.096	-10.022	-266.552	-249.127	7.403	48.025	-208.505	-191.081	65.450
	249	Field	57.081	24.866	6.274	-7.131	79.913	108.282	97.498	88.114	89.228	98.612	55.507	46.123	47.238	56.622
		Right support	-80.210	-34.412	183.279	-170.481	-112.293	-151.310	1.471	-246.161	-262.798	-15.166	59.946	-187.686	-204.323	43.309
	280	Left support	-79.839	-34.806	186.434	-173.486	-111.775	-151.497	3.775	-248.169	-265.001	-13.057	62.533	-189.411	-202.243	45.701
		Field	53.045	23.603	0.242	-0.312	74.263	101.419	87.406	87.018	87.108	87.496	47.889	47.502	47.592	47.980
	225	Right support	-78.855	-34.440	170.934	-183.634	-110.397	-149.730	-13.222	-261.420	-244.909	3.288	44.874	-203.323	-186.813	61.385
		Left support	-71.880	-25.795	199.395	-185.470	-100.632	-127.528	31.702	-237.703	-255.805	13.601	79.062	-190.344	-208.466	60.960
	251	Field	42.341	14.681	7.834	-7.294	59.277	74.298	71.135	60.545	59.843	70.433	43.752	33.162	32.461	43.050
		Right support	-66.292	-23.127	166.663	-179.132	-92.809	-116.554	10.246	-231.810	-215.601	26.455	53.260	-188.796	-172.586	69.470
	273	Left support	-11.579	-3.902	270.471	-249.962	-16.210	-20.137	177.686	-186.617	-213.279	151.025	185.061	-179.242	-205.903	158.400
		Field	-4.121	-2.196	0.724	-0.758	-5.769	-8.458	-6.644	-7.682	-7.637	-6.600	-3.212	-4.250	-4.205	-3.167
	273	Right support	-22.194	-9.587	243.804	-263.430	-31.071	-41.971	128.556	-226.508	-200.994	154.070	144.801	-210.264	-184.750	170.315
		Left support	-15.275	-6.211	250.724	-271.309	-21.385	-28.268	144.790	-220.633	-193.872	171.551	155.584	-209.839	-183.078	182.345
	405	Field	-2.677	-1.591	1.735	-1.587	-3.748	-5.758	-3.544	-5.870	-6.063	-3.737	-1.150	-3.476	-3.669	-1.343
		Right support	-15.697	-6.158	273.819	-253.003	-21.976	-28.690	172.923	-195.852	-222.913	145.863	183.791	-184.985	-212.046	156.730
	413	Left support	-15.700	-7.268	273.564	-252.804	-21.980	-30.469	171.614	-196.844	-223.831	144.626	183.592	-184.865	-211.853	156.605
		Field	-1.838	-0.744	2.190	-2.448	-2.573	-3.396	-1.494	-4.741	-4.405	-1.158	-0.199	-3.446	-3.109	0.137
3rd floor	405	Right support	-14.172	-4.248	250.207	-270.859	-19.841	-23.803	147.694	-217.052	-190.204	174.542	156.194	-208.552	-181.704	183.042
		Left support	-79.046	-34.234	185.764	-173.898	-110.665	-149.629	4.505	-247.258	-262.684	-10.921	62.453	-189.310	-204.736	47.027
	413	Field	53.224	23.685	0.127	-0.113	74.513	101.764	87.646	87.478	87.461	87.629	47.994	47.826	47.809	47.977
		Right support	-79.282	-34.942	172.528	-184.302	-110.995	-151.045	-12.842	-262.624	-247.318	2.464	45.884	-203.898	-188.591	61.190
	434	Left support	-85.394	-36.862	177.911	-190.074	-119.551	-161.451	-18.445	-276.035	-260.223	-2.634	44.035	-213.555	-197.743	59.846
		Field	54.976	23.983	5.272	-5.623	76.966	104.343	93.539	85.912	86.368	93.995	53.064	45.437	45.893	53.520
	434	Right support	-78.181	-33.464	183.250	-171.502	-109.454	-147.359	4.519	-243.808	-259.081	-10.754	61.437	-186.890	-202.163	46.164
		Left support	-80.065	-34.841	186.241	-174.328	-112.090	-151.823	3.025	-249.373	-264.861	-12.463	61.885	-190.513	-206.001	46.397
	465	Field	53.175	23.674	0.140	-0.141	74.445	101.688	87.581	87.384	87.387	87.583	47.955	47.758	47.760	47.957
		Right support	-78.226	-34.174	172.955	-184.733	-109.516	-148.549	-10.509	-260.890	-245.580	4.802	47.132	-203.249	-187.938	62.443
	410	Left support	-73.807	-26.808	194.085	-181.635	-103.329	-131.460	24.219	-238.785	-254.971	8.033	73.169	-189.835	-206.021	56.983
		Field	42.329	14.654	7.545	-7.064	59.261	74.242	70.875	60.649	60.024	70.249	43.522	33.296	32.671	42.896
	436	Right support	-63.726	-21.928	164.691	-175.966	-89.216	-111.556	13.502	-224.958	-210.300	28.160	54.547	-183.912	-169.254	69.205
		Left support	-13.538	-4.521	242.526	-226.801	-18.953	-23.480	153.718	-174.810	-195.253	133.276	162.301	-166.227	-186.670	141.858
	458	Field	-2.770	-1.644	2.857	-3.061	-3.877	-5.953	-3.028	-7.171	-6.906	-2.764	-0.554	-4.696	-4.432	-0.289
		Right support	-17.357	-7.770	225.901	-241.575	-24.299	-33.259	124.831	-202.402	-182.027	145.207	137.808	-189.425	-169.050	158.183
	458	Left support	-15.059	-6.211	226.526	-242.221	-21.083	-28.009	129.577	-198.545	-178.142	149.981	140.306	-187.816	-167.413	160.710
		Field	-2.988	-1.722	1.467	-1.373	-4.183	-6.340	-4.252	-6.240	-6.362	-4.374	-1.634	-3.622	-3.744	-1.756
	458	Right support	-16.560	-6.426	244.134	-228.307	-23.184	-30.154	149.344	-181.365	-201.941	128.768	160.738	-169.970	-190.546	140.162
		Left support	-16.456	-8.339	244.183	-228.311	-23.038	-33.089	147.603	-183.142	-203.775	126.970	160.879	-169.866	-190.499	140.246
	590	Field	-2.084	-0.822	1.766	-1.896	-2.918	-3.817	-2.126	-4.689	-4.521	-1.958	-0.678	-3.242	-3.073	-0.510
		Right support	-13.798	-3.297	225.804	-241.489	-19.317	-21.833	133.503	-193.602	-173.213	153.892	140.940	-186.165		

5th floor	775	Left support	-78.692	-33.949	145.366	-137.076	-110.169	-148.749	-24.137	-221.846	-232.623	-34.914	33.420	-164.290	-175.067	22.643
		Field	53.293	23.649	0.616	-0.570	74.610	101.790	88.045	87.215	87.155	87.985	48.409	47.578	47.518	48.349
	783	Right support	-79.292	-35.185	138.041	-146.424	-111.008	-151.445	-36.220	-235.346	-224.448	-25.322	22.752	-176.374	-165.476	33.650
		Left support	-85.486	-37.200	133.116	-141.079	-119.681	-162.103	-48.991	-240.927	-230.576	-38.639	13.855	-178.082	-167.730	24.206
	804	Field	55.266	24.021	2.297	-2.480	77.372	104.752	91.893	88.549	88.787	92.131	51.292	47.948	48.186	51.530
		Right support	-76.330	-32.635	134.833	-127.105	-106.862	-143.813	-27.530	-210.887	-220.933	-37.576	28.004	-155.353	-165.399	17.958
	835	Left support	-80.366	-34.892	145.920	-137.575	-112.512	-152.267	-26.683	-225.130	-235.979	-37.533	32.319	-166.128	-176.977	21.470
		Field	53.147	23.648	0.698	-0.667	74.406	101.614	87.922	86.967	86.927	87.883	48.330	47.374	47.335	48.291
	806	Right support	-77.745	-34.069	138.614	-147.000	-108.843	-147.804	-32.849	-232.778	-221.876	-21.947	24.543	-175.386	-164.484	35.445
		Left support	-76.453	-28.061	142.626	-134.609	-107.034	-136.641	-17.561	-211.625	-222.047	-27.983	33.436	-160.628	-171.051	23.013
	828	Field	42.110	14.523	5.306	-4.946	58.953	73.769	68.877	61.701	61.232	68.409	41.721	34.545	34.076	41.253
		Right support	-60.701	-20.691	124.726	-132.345	-84.981	-105.946	-8.509	-188.459	-178.555	1.395	30.392	-149.558	-139.653	40.296
	780	Left support	-13.151	-3.936	140.742	-132.999	-18.412	-22.080	81.125	-110.494	-120.560	71.058	89.006	-102.612	-112.678	78.940
		Field	-3.164	-1.664	1.984	-2.098	-4.430	-6.459	-4.106	-6.963	-6.815	-3.958	-1.493	-4.350	-4.203	-1.346
	806	Right support	-18.346	-8.302	133.323	-141.092	-25.685	-35.299	60.678	-131.413	-121.313	70.778	74.484	-117.607	-107.507	84.583
		Left support	-15.169	-6.253	134.111	-141.936	-21.236	-28.206	67.075	-126.157	-115.985	77.247	77.879	-115.354	-105.182	88.050
	828	Field	-3.101	-1.619	0.798	-0.754	-4.342	-6.312	-4.769	-5.855	-5.912	-4.826	-2.220	-3.306	-3.363	-2.277
		Right support	-16.710	-6.182	142.660	-134.797	-23.394	-29.943	75.987	-118.233	-128.454	65.765	87.182	-107.038	-117.259	76.960
		Left support	-14.425	-9.081	143.769	-135.793	-20.195	-31.840	76.640	-119.054	-129.423	66.271	90.049	-105.645	-116.014	79.680
		Field	-1.979	-0.676	0.457	-0.493	-2.771	-3.456	-2.741	-3.406	-3.360	-2.695	-1.472	-2.137	-2.091	-1.425
		Right support	-15.392	-2.200	133.644	-141.503	-21.549	-21.990	70.523	-122.080	-111.864	80.739	77.340	-115.262	-105.046	87.556
		Left support	-79.339	-33.665	110.895	-105.231	-111.074	-149.070	-49.546	-200.833	-208.196	-66.909	7.921	-143.367	-150.730	0.558
6th floor	960	Field	52.685	23.783	0.848	-0.783	73.759	101.275	87.618	86.476	86.392	87.533	48.029	46.888	46.803	47.945
		Right support	-79.793	-35.143	107.500	-113.362	-111.710	-151.980	-57.403	-212.007	-204.386	-49.782	1.678	-152.926	-145.305	9.299
	968	Left support	-87.503	-37.190	97.226	-102.302	-122.504	-164.508	-75.658	-215.328	-208.730	-69.060	-12.217	-151.887	-145.289	-5.619
		Field	54.351	24.167	0.476	-0.484	76.091	103.888	89.718	89.046	89.057	89.729	49.247	48.574	48.585	49.257
		Right support	-75.977	-32.176	96.666	-91.841	-106.368	-142.654	-54.235	-186.190	-192.462	-60.507	0.734	-131.220	-137.493	-5.538
		Left support	-80.876	-34.771	111.705	-105.972	-113.226	-152.684	-51.908	-204.282	-211.734	-59.360	7.125	-145.249	-152.701	-0.327
	989	Field	52.609	23.783	1.031	-0.988	73.652	101.183	87.648	86.235	86.179	87.592	48.082	46.669	46.614	48.027
		Right support	-78.137	-33.861	108.226	-114.088	-109.392	-147.943	-53.626	-209.246	-201.626	-46.006	3.676	-151.944	-144.324	11.296
	1020	Left support	-76.874	-27.994	100.112	-95.182	-107.623	-137.039	-48.685	-185.391	-191.800	-55.094	2.371	-134.335	-140.744	-4.038
		Field	42.363	14.765	3.449	-3.226	59.308	74.459	68.081	63.409	63.119	67.792	40.608	35.935	35.646	40.318
		Right support	-59.476	-20.182	90.515	-95.444	-83.266	-103.662	-29.672	-159.843	-153.434	-23.263	8.353	-121.818	-115.410	14.762
		Left support	-11.780	-3.975	72.022	-69.354	-16.492	-20.496	33.104	-65.859	-69.327	29.637	40.613	-58.350	-61.818	37.146
	965	Field	-1.781	-2.030	1.282	-1.345	-2.493	-5.385	-3.288	-5.127	-5.046	-3.207	-0.724	-2.563	-2.481	-0.642
		Right support	-16.768	-8.989	70.279	-73.025	-23.475	-34.503	19.261	-81.052	-77.482	22.831	33.280	-67.033	-63.463	36.850
		Left support	-13.370	-6.670	71.362	-74.175	-18.717	-26.716	26.395	-75.480	-71.823	30.053	37.076	-64.799	-61.142	40.734
		Field	-1.787	-1.957	0.376	-0.361	-2.502	-5.276	-3.834	-4.350	-4.369	-3.853	-1.341	-1.857	-1.876	-1.360
	991	Right support	-15.820	-6.460	74.207	-71.405	-22.148	-29.321	27.341	-74.587	-78.230	23.698	38.548	-63.381	-67.024	34.905
		Left support	-14.362	-10.014	74.238	-71.297	-20.107	-33.257	25.600	-76.274	-80.097	21.777	39.923	-61.951	-65.774	36.100
	1013	Field	-1.775	-1.109	0.375	-0.361	-2.486	-3.904	-2.972	-3.487	-3.506	-2.991	-1.331	-1.846	-1.865	-1.350
		Right support	-14.996	-2.166	70.964	-73.849	-20.994	-21.461	28.648	-72.721	-68.970	32.399	35.313	-66.056	-62.305	39.064
	1145	Left support	-66.891	-12.835	76.666	-72.895	-93.647	-100.804	-38.306	-142.998	-147.901	-43.209	-5.404	-110.097	-114.999	-10.307
		Field	49.933	9.787	1.119	-1.040	69.906	75.579	70.514	69.002	68.900	70.411	45.746	44.235	44.133	45.644
		Right support	-66.947	-13.974	75.936	-79.939	-93.726	-102.695	-42.357	-151.469	-146.265	-37.152	-8.299	-117.411	-112.206	-3.094
		Left support	-69.102	-15.529	61.966	-64.897	-96.743	-107.769	-55.955	-144.759	-140.949	-52.145	-19.695	-108.499	-104.689	-15.885
	1153	Field	52.431	9.769	1.755	-1.486	73.404	78.548	73.996	71.727	71.378	73.647	48.497	46.228	45.879	48.148
		Right support	-65.572	-11.249	61.620	-58.789	-91.801	-96.684	-45.951	-130.238	-133.919	-49.632	-15.031	-99.318	-102.998	-18.712
	1174	Left support	-70.137	-13.620	76.439	-72.662	-98.191	-105.956	-43.144	-147.514	-152.424	-48.054	-8.483	-112.853	-117.763	-13.393
		Field	49.243	9.822	1.032	-0.961	68.940	74.806	69.657	68.262	68.169	69.564	45.062	43.667	43.574	44.969
	1205	Right support	-64.997	-13.063	76.322	-80.347	-90.996	-98.897	-38.842	-148.510	-143.276	-33.608	-6.280	-115.948	-110.715	-1.046
		Left support	-73.797	-14.688	69.099	-66.269	-103.315	-112.057	-54.025	-148.783	-152.463	-57.705	-17.198	-111.956	-115.636	-20.878
	1150	Field	37.957	5.142	2.025	-1.953	53.139	53.774	52.129	49.344	49.250	52.035	35.600	32.816	32.722	35.506
		Right support	-55.906	-5.456	65.725	-68.747	-78.268	-75.816	-27.441	-121.571	-117.644	-23.514	-5.214	-99.344	-95.416	-1.286
		Left support	-19.116	-1.351	6.629	-7.490	-26.762	-25.101	-19.908	-29.791	-28.671	-18.788	-12.823	-22.706	-21.585	-11.702
		Field	-9.126	-1.183	1.906	-2.021	-12.777	-12.845	-10.835	-13.584	-13.434	-10.686	-6.914	-9.663	-9.513	-6.764
	1176	Right support	-22.353	-4.452	11.459	-10.879	-31.294	-33.948	-23.081	-38.718	-39.471	-23.835	-11.923	-27.559	-28.313	-12.676
		Left support	-19.929	-3.127	9.282	-8.544	-27.901	-28.918	-20.323	-32.801	-33.761	-21.282	-11.217	-23.696	-24.655	-12.177
	1198	Field	-8.954	-1.202	0.204	-0.244	-12.535	-12.668	-11.816	-12.129	-12.077	-11.764	-7.928	-8.241	-8.189	-7.876
		Right support	-21.539	-2.976	7.528	-8.346	-30.155	-30.609	-23.799	-34.911	-33.847	-22.735	-14.361	-25.473	-24.410	-13.298
	1321	Left support	-0.801	-0.312	19.392	-19.855	-1.122	-6.261	9.162	-18.311	-17.709	9.763	12.715	-14.758	-14.157	13.316
		Field	-3.192	0.043	4.116	-4.007	-4.469	-3.762	-0.874	-6.560	-6.701	-1.016	0.040	-5.645	-5.787	-0.101
		Right support	-28.584	-0.344	12.307	-11.712	-40.017	-34.850	-25.851	-42.664	-43.437	-26.624	-16.932	-33.745	-34.518	-17.705
		Left support	-53.474	-9.038	47.799	-49.608	-74.863	-78.629	-40.290	-108.475	-106.122	-37.937	-15.210	-83.395	-81.043	-12.858
		Field	51.166	11.283	0.829	-0.696	71.633	79.453	73.303	72.236	72.062	73.129	46.670	45.603	45.429	46.496
		Right support	-66.592	-16.048	47.427	-45.862	-93.229	-105.588	-62.290	-127.593	-129.627	-64.324	-26.264	-91.		

Attachment VIII.2. Calculation of longitudinal reinforcement and beam design moment as-E

Floor	Beam No	Beam Position	Beam Dimension		Moment Need (M_u)		Reinforcement		Moment desain (M_d)	
			b	h	$M_u^{(-)}$	$M_u^{(+)}$	Above	Under	$M_d^{(-)}$	$M_d^{(+)}$
			(mm)	(mm)	(kNm)	(kNm)	n.Dx	n.Dx	(kNm)	(kNm)
1st floor	30	Left support	300	500	243.002	81.001	5D22	2D22	253.924	175.811
		Field	300	500	48.600	102.582	2D22	2D22	133.229	133.229
		Right support	300	500	241.931	80.644	5D22	2D22	253.924	175.811
	59	Left support	300	500	244.829	81.610	5D22	2D22	253.924	175.811
		Field	300	500	48.966	102.876	2D22	2D22	133.229	133.229
		Right support	300	500	241.077	80.359	5D22	2D22	253.924	175.811
	93	Left support	300	500	238.332	79.444	5D22	2D22	253.924	175.811
		Field	300	500	47.666	75.982	2D22	2D22	133.229	133.229
		Right support	300	500	221.764	73.921	5D22	2D22	253.924	175.811
	35	Left support	300	500	237.273	183.025	5D22	4D22	254.792	218.281
		Field	300	500	47.455	47.455	2D22	2D22	133.229	133.229
		Right support	300	500	219.086	215.104	5D22	4D22	254.792	218.281
	61	Left support	300	500	220.607	177.571	5D22	4D22	254.792	218.281
		Field	300	500	44.544	44.544	2D22	2D22	133.229	133.229
		Right support	300	500	222.719	179.195	5D22	4D22	254.792	218.281
	83	Left support	300	500	220.533	178.950	5D22	4D22	254.792	218.281
		Field	300	500	44.107	44.107	2D22	2D22	133.229	133.229
		Right support	300	500	219.337	177.136	5D22	4D22	254.792	218.281
2nd floor	220	Left support	300	500	264.093	88.031	6D22	2D22	299.970	178.605
		Field	300	500	52.819	101.721	2D22	2D22	133.229	133.229
		Right support	300	500	262.330	87.443	6D22	2D22	299.970	178.605
	228	Left support	300	500	266.552	88.851	6D22	2D22	299.970	178.605
		Field	300	500	53.310	108.282	2D22	2D22	133.229	133.229
		Right support	300	500	262.798	87.599	6D22	2D22	299.970	178.605
	249	Left support	300	500	265.001	88.334	6D22	2D22	299.970	178.605
		Field	300	500	53.000	101.419	2D22	2D22	133.229	133.229
		Right support	300	500	261.420	87.140	6D22	2D22	299.970	178.605
	280	Left support	300	500	255.805	85.268	6D22	2D22	299.970	178.605
		Field	300	500	51.161	74.298	2D22	2D22	133.229	133.229
		Right support	300	500	231.810	77.270	6D22	2D22	299.970	178.605
	225	Left support	300	500	213.279	185.061	5D22	4D22	271.213	219.718
		Field	300	500	45.302	45.302	2D22	2D22	133.229	133.229
		Right support	300	500	226.508	170.315	5D22	4D22	254.792	218.281
	251	Left support	300	500	220.633	182.345	5D22	4D22	254.792	218.281
		Field	300	500	44.583	44.583	2D22	2D22	133.229	133.229
		Right support	300	500	222.913	183.791	5D22	4D22	254.792	218.281
	273	Left support	300	500	223.831	183.592	5D22	4D22	254.792	218.281
		Field	300	500	44.766	44.766	2D22	2D22	133.229	133.229
		Right support	300	500	217.052	183.042	5D22	4D22	271.213	219.718
3rd floor	405	Left support	300	500	262.684	87.561	6D22	2D22	299.970	178.605
		Field	300	500	52.537	101.764	2D22	2D22	133.229	133.229
		Right support	300	500	262.624	87.541	6D22	2D22	299.970	178.605
	413	Left support	300	500	276.035	92.012	6D22	2D22	299.970	178.605
		Field	300	500	55.207	104.343	2D22	2D22	133.229	133.229
		Right support	300	500	259.081	86.360	6D22	2D22	299.970	178.605
	434	Left support	300	500	264.861	88.287	6D22	2D22	299.970	178.605
		Field	300	500	52.972	101.688	2D22	2D22	133.229	133.229
		Right support	300	500	260.890	86.963	6D22	2D22	299.970	178.605
	465	Left support	300	500	254.971	84.990	6D22	2D22	299.970	178.605
		Field	300	500	50.994	74.242	2D22	2D22	133.229	133.229
		Right support	300	500	224.958	74.986	6D22	2D22	299.970	178.605
	410	Left support	300	500	195.253	162.301	4D22	3D22	219.705	167.840
		Field	300	500	40.480	40.480	2D22	2D22	133.229	133.229
		Right support	300	500	202.402	158.183	4D22	3D22	219.705	167.840
	436	Left support	300	500	198.545	160.710	4D22	3D22	219.705	167.840
		Field	300	500	40.388	40.388	2D22	2D22	133.229	133.229
		Right support	300	500	201.941	160.738	4D22	3D22	219.705	167.840
	458	Left support	300	500	203.775	160.879	4D22	3D22	219.705	167.840
		Field	300	500	40.755	40.755	2D22	2D22	133.229	133.229
		Right support	300	500	193.602	161.329	4D22	3D22	219.705	167.840

4th floor	590	Left support	300	500	252.071	84.024	6D22	2D22	299.970	178.605
		Field	300	500	50.699	101.715	2D22	2D22	133.229	133.229
		Right support	300	500	253.497	84.499	6D22	2D22	299.970	178.605
	598	Left support	300	500	261.926	87.309	6D22	2D22	299.970	178.605
		Field	300	500	52.385	104.877	2D22	2D22	133.229	133.229
		Right support	300	500	243.692	81.231	6D22	2D22	299.970	178.605
	619	Left support	300	500	254.786	84.929	6D22	2D22	299.970	178.605
		Field	300	500	50.957	101.592	2D22	2D22	133.229	133.229
		Right support	300	500	251.355	83.785	6D22	2D22	299.970	178.605
	650	Left support	300	500	243.045	81.015	5D22	2D22	253.924	175.811
		Field	300	500	48.609	74.028	2D22	2D22	133.229	133.229
		Right support	300	500	210.409	70.136	5D22	2D22	270.346	139.471
	595	Left support	300	500	162.655	131.261	4D22	3D22	219.705	167.840
		Field	300	500	34.494	34.494	2D22	2D22	133.229	133.229
		Right support	300	500	172.468	125.927	4D22	3D22	219.705	167.840
	621	Left support	300	500	167.497	129.721	4D22	3D22	219.705	167.840
		Field	300	500	34.031	34.031	2D22	2D22	133.229	133.229
		Right support	300	500	170.155	129.480	4D22	3D22	219.705	167.840
	643	Left support	300	500	172.372	130.299	4D22	3D22	219.705	167.840
		Field	300	500	34.474	34.474	2D22	2D22	133.229	133.229
		Right support	300	500	162.313	130.108	4D22	3D22	219.705	167.840
5th floor	775	Left support	300	500	232.623	77.541	5D22	2D22	253.924	175.811
		Field	300	500	47.069	101.790	2D22	2D22	133.229	133.229
		Right support	300	500	235.346	78.449	5D22	2D22	253.924	175.811
	783	Left support	300	500	240.927	80.309	5D22	2D22	253.924	175.811
		Field	300	500	48.185	104.752	2D22	2D22	133.229	133.229
		Right support	300	500	220.933	73.644	5D22	2D22	253.924	175.811
	804	Left support	300	500	235.979	78.660	5D22	2D22	253.924	175.811
		Field	300	500	47.196	101.614	2D22	2D22	133.229	133.229
		Right support	300	500	232.778	77.593	5D22	2D22	253.924	175.811
	835	Left support	300	500	222.047	74.016	5D22	2D22	253.924	175.811
		Field	300	500	44.409	73.769	2D22	2D22	133.229	133.229
		Right support	300	500	188.459	62.820	5D22	2D22	270.346	139.471
	780	Left support	300	500	120.560	89.006	3D22	2D22	167.895	136.194
		Field	300	500	26.283	26.283	2D22	2D22	133.229	133.229
		Right support	300	500	131.413	84.583	3D22	2D22	167.895	136.194
	806	Left support	300	500	126.157	88.050	3D22	2D22	167.895	136.194
		Field	300	500	25.691	25.691	2D22	2D22	133.229	133.229
		Right support	300	500	128.454	87.182	3D22	2D22	167.895	136.194
	828	Left support	300	500	129.423	90.049	3D22	2D22	167.895	136.194
		Field	300	500	25.885	25.885	2D22	2D22	133.229	133.229
		Right support	300	500	122.080	87.556	3D22	2D22	167.895	136.194
6th floor	960	Left support	300	500	208.196	69.399	4D22	2D22	219.622	138.117
		Field	300	500	42.401	101.275	2D22	2D22	133.229	133.229
		Right support	300	500	212.007	70.669	4D22	2D22	219.622	138.117
	968	Left support	300	500	215.328	71.776	4D22	2D22	219.622	138.117
		Field	300	500	43.066	103.888	2D22	2D22	133.229	133.229
		Right support	300	500	192.462	64.154	4D22	2D22	219.622	138.117
	989	Left support	300	500	211.734	70.578	4D22	2D22	219.622	138.117
		Field	300	500	42.347	101.183	2D22	2D22	133.229	133.229
		Right support	300	500	209.246	69.749	4D22	2D22	219.622	138.117
	1020	Left support	300	500	191.800	63.933	4D22	2D22	219.622	138.117
		Field	300	500	38.360	74.459	2D22	2D22	133.229	133.229
		Right support	300	500	159.843	53.281	4D22	2D22	219.622	138.117
	965	Left support	300	500	69.327	40.613	2D22	2D22	133.229	133.229
		Field	300	500	16.210	16.210	2D22	2D22	133.229	133.229
		Right support	300	500	81.052	36.850	2D22	2D22	133.229	133.229
	991	Left support	300	500	75.480	40.734	2D22	2D22	133.229	133.229
		Field	300	500	15.646	15.646	2D22	2D22	133.229	133.229
		Right support	300	500	78.230	38.548	2D22	2D22	133.229	133.229
	1013	Left support	300	500	80.097	39.923	2D22	2D22	133.229	133.229
		Field	300	500	16.019	16.019	2D22	2D22	133.229	133.229
		Right support	300	500	72.721	39.064	2D22	2D22	133.229	133.229

Roof floor	1145	Left support	300	500	147.901	49.300	3D22	2D22	167.895	136.194
		Field	300	500	30.294	75.579	2D22	2D22	133.229	133.229
		Right support	300	500	151.469	50.490	3D22	2D22	167.895	136.194
	1153	Left support	300	500	144.759	48.253	3D22	2D22	167.895	136.194
		Field	300	500	28.952	78.548	2D22	2D22	133.229	133.229
		Right support	300	500	133.919	44.640	3D22	2D22	167.895	136.194
	1174	Left support	300	500	152.424	50.808	3D22	2D22	167.895	136.194
		Field	300	500	30.485	74.806	2D22	2D22	133.229	133.229
		Right support	300	500	148.510	49.503	3D22	2D22	167.895	136.194
	1205	Left support	300	500	152.463	50.821	3D22	2D22	167.895	136.194
		Field	300	500	30.493	53.774	2D22	2D22	133.229	133.229
		Right support	300	500	121.571	40.524	3D22	2D22	167.895	136.194
	1150	Left support	300	500	29.791	9.930	2D22	2D22	133.229	133.229
		Field	300	500	7.894	7.894	2D22	2D22	133.229	133.229
		Right support	300	500	39.471	13.157	2D22	2D22	133.229	133.229
	1176	Left support	300	500	33.761	11.254	2D22	2D22	133.229	133.229
		Field	300	500	6.982	6.982	2D22	2D22	133.229	133.229
		Right support	300	500	34.911	11.637	2D22	2D22	133.229	133.229
	1198	Left support	300	500	18.311	13.316	2D22	2D22	133.229	133.229
		Field	300	500	8.687	8.687	2D22	2D22	133.229	133.229
		Right support	300	500	43.437	14.479	2D22	2D22	133.229	133.229
	1321	Left support	300	500	108.475	36.158	3D22	2D22	167.895	136.194
		Field	300	500	25.925	79.453	2D22	2D22	133.229	133.229
		Right support	300	500	129.627	43.209	3D22	2D22	167.895	136.194

Attachment VIII.3. Calculation of the shear force necessary combination of the AS-E beam due to load combination

Floor	Beam No	Beam Position	Beam Shear Force (kNm)				Load Combination (kNm)									
			V _D	V _L	V _{Ex}	V _{Ey}	1,4V _D	1,2V _D +1,6V _L	1,2V _D +V _L +2V _E (V _{Ex} +0,3V _{Ey}) (0,3V _{Ex} +V _{Ey})		1,2V _D +V _L -2V _E (V _{Ex} +0,3V _{Ey}) (0,3V _{Ex} +V _{Ey})		0,9V _D +2V _E (V _{Ex} +0,3V _{Ey}) (0,3V _{Ex} +V _{Ey})		0,9V _D -2V _E (V _{Ex} +0,3V _{Ey}) (0,3V _{Ex} +V _{Ey})	
1st floor	30	Left support	-60.401	-25.529	49.309	-44.137	-84.561	-113.328	-25.874	-156.699	-170.146	-39.322	17.775	-113.050	-126.497	4.328
		Field	11.625	4.969	42.039	-37.839	16.275	21.900	80.294	-31.536	-42.456	69.374	71.837	-39.992	-50.912	60.917
		Right support	60.679	25.718	45.157	-40.622	84.951	113.964	164.474	44.383	32.592	152.683	120.552	0.461	-11.330	108.761
	59	Left support	-60.629	-25.602	49.646	-44.439	-84.881	-113.718	-25.728	-157.447	-170.985	-39.266	18.063	-113.657	-127.195	4.524
		Field	11.350	4.813	42.336	-38.118	15.890	21.321	80.234	-32.401	-43.368	69.267	72.016	-40.619	-51.586	61.049
		Right support	60.517	25.565	45.343	-40.803	84.724	113.524	164.390	43.785	31.981	152.586	120.670	0.065	-11.739	108.866
	93	Left support	-49.460	-15.265	50.135	-44.679	-69.244	-83.776	-1.154	-133.894	-148.080	-15.340	28.949	-103.791	-117.977	14.763
		Field	-2.592	-1.550	48.159	-42.892	-3.629	-5.590	65.922	-61.549	-75.243	52.228	68.250	-59.221	-72.916	54.556
		Right support	53.470	18.898	44.968	-40.026	74.858	94.401	148.982	29.991	17.142	136.133	114.043	-4.948	-17.797	101.194
	35	Left support	-20.335	-6.801	178.246	-156.111	-28.469	-35.284	231.622	-236.477	-294.028	174.071	244.524	-223.576	-281.127	186.973
		Field	-5.836	-2.725	174.657	-152.929	-8.170	-11.363	247.828	-210.792	-267.285	191.336	252.304	-206.316	-262.809	195.811
		Right support	9.544	2.373	171.370	-150.059	13.362	15.250	266.530	-183.470	-238.879	211.122	261.294	-188.706	-244.115	205.886
	61	Left support	-13.287	-4.171	139.663	-159.720	-18.602	-22.618	163.379	-255.758	-203.609	215.527	171.536	-247.601	-195.452	223.684
		Field	0.797	-0.218	141.238	-161.584	1.116	0.608	186.264	-237.687	-184.787	239.164	186.243	-237.708	-184.808	239.143
		Right support	13.430	4.165	144.100	-164.802	18.802	22.780	209.600	-222.863	-169.038	263.425	201.406	-231.057	-177.232	255.231
	83	Left support	-13.933	-5.025	163.977	-143.357	-19.506	-24.760	220.195	-210.072	-263.684	166.583	229.400	-200.868	-254.480	175.788
		Field	1.010	-0.051	160.648	-140.438	1.414	1.130	238.194	-183.326	-235.872	185.648	237.942	-183.578	-236.124	185.396
		Right support	13.738	4.441	159.299	-139.313	19.233	23.591	255.937	-162.120	-214.084	203.973	247.374	-170.682	-222.646	195.411
2nd floor	220	Left support	-60.656	-25.581	57.727	-53.704	-84.918	-113.717	-15.137	-171.140	-181.600	-25.596	28.641	-127.362	-137.822	18.181
		Field	11.415	4.912	50.371	-46.883	15.981	21.557	91.222	-44.933	-54.002	82.153	82.886	-53.270	-62.339	73.817
		Right support	60.523	25.643	54.059	-50.311	84.732	113.656	176.202	30.084	20.339	166.457	132.402	-13.716	-23.461	122.657
	228	Left support	-63.007	-25.934	48.606	-52.285	-88.210	-117.103	-35.701	-176.949	-167.383	-26.136	9.135	-132.113	-122.547	18.700
		Field	12.153	4.975	47.199	-50.763	17.014	22.544	83.499	-53.648	-44.382	92.765	74.878	-62.629	-53.003	84.144
		Right support	62.247	25.916	54.733	-58.849	87.146	116.162	174.769	15.754	26.456	185.471	130.179	-28.836	-18.134	140.881
	249	Left support	-60.667	-25.592	57.680	-53.647	-84.934	-113.748	-15.221	-171.078	-181.564	-25.706	28.572	-127.286	-137.772	18.086
		Field	11.258	4.784	50.309	-46.831	15.761	21.164	90.813	-45.183	-54.226	81.770	82.652	-53.344	-62.387	73.609
		Right support	60.462	25.545	54.028	-50.300	84.647	113.426	175.975	29.916	20.223	166.283	132.292	-13.767	-23.460	122.599
	280	Left support	-50.153	-15.626	56.030	-52.118	-70.214	-85.185	4.980	-146.428	-156.599	-5.192	35.652	-115.756	-125.927	25.480
		Field	-3.224	-1.881	53.873	-50.094	-4.514	-6.878	71.940	-73.614	-83.439	62.114	74.788	-70.766	-80.591	64.963
		Right support	52.405	18.390	50.826	-47.311	73.367	92.310	154.541	17.150	8.011	145.402	120.430	-16.962	-26.101	111.291
	225	Left support	-10.038	-2.363	167.639	-155.074	-14.053	-15.826	227.825	-223.973	-256.642	195.156	233.199	-218.599	-251.268	200.530
		Field	3.987	1.532	163.614	-151.283	5.582	7.236	242.775	-198.081	-230.142	210.714	240.047	-200.809	-232.870	207.986
		Right support	16.589	5.856	162.246	-150.120	23.225	29.276	260.183	-177.130	-208.657	228.655	249.350	-187.962	-219.490	217.823
	251	Left support	-13.196	-4.160	153.376	-165.910	-18.474	-22.491	187.211	-259.790	-227.201	219.799	195.330	-251.671	-219.082	227.918
		Field	0.850	-0.233	154.680	-167.433	1.190	0.647	209.687	-241.271	-208.113	242.845	209.665	-241.293	-208.135	242.823
		Right support	13.460	4.128	158.020	-170.948	18.844	22.757	233.751	-226.804	-193.191	267.364	225.585	-234.970	-201.357	259.198
273	Left support	-14.263	-5.796	170.366	-157.423	-19.968	-26.389	223.367	-235.538	-269.190	189.715	233.442	-225.463	-259.115	199.790	
	Field	0.384	-0.955	166.941	-154.217	0.538	-1.067	240.858	-208.764	-241.846	207.775	241.697	-207.924	-241.006	208.615	
	Right support	13.003	3.481	165.895	-153.352	18.204	21.173	258.863	-188.082	-220.694	226.252	251.482	-195.464	-228.076	218.870	
3rd floor	405	Left support	-60.578	-25.507	56.857	-53.213	-84.809	-113.505	-16.414	-170.512	-179.987	-25.889	27.266	-126.832	-136.306	17.792
		Field	11.496	4.976	50.497	-47.277	16.094	21.757	91.399	-45.485	-53.857	83.027	82.974	-53.909	-62.281	74.602
		Right support	60.550	25.676	54.346	-50.865	84.770	113.742	176.509	29.214	20.163	167.458	132.668	-14.627	-23.678	123.617
	413	Left support	-64.056	-26.447	49.449	-52.841	-89.678	-119.182	-36.121	-179.327	-170.508	-27.302	9.543	-133.663	-124.844	18.362
		Field	11.067	4.491	47.516	-50.758	15.494	20.466	82.349	-55.235	-46.806	90.778	74.538	-63.046	-54.617	82.967
		Right support	60.971	25.350	54.254	-57.979	85.359	113.725	172.236	15.110	24.795	181.921	128.595	-28.532	-18.847	138.280
	434	Left support	-60.739	-25.607	57.006	-53.335	-85.035	-113.858	-16.483	-170.960	-180.505	-26.027	27.346	-127.132	-136.676	17.801
		Field	11.124	4.735	50.619	-47.397	15.574	20.925	90.884	-46.339	-54.716	82.506	82.811	-54.411	-62.788	74.434
		Right support	60.315	25.483	54.468	-50.998	84.441	113.151	176.198	28.546	19.524	167.176	132.621	-15.032	-24.054	123.599
	465	Left support	-50.724	-15.919	54.544	-51.045	-71.014	-86.339	1.673	-146.151	-155.249	-7.424	32.809	-115.015	-124.113	23.712
		Field	-3.735	-2.146	52.520	-49.141	-5.229	-7.916	68.927	-73.398	-82.183	60.142	72.194	-70.132	-78.917	63.409
		Right support	51.513	17.971	49.960	-46.768	72.118	90.569	151.646	16.227	7.927	143.347	118.221	-17.198	-25.498	109.922
	410	Left support	-11.995	-3.045	151.942	-142.088	-16.793	-19.266	201.192	-210.450	-236.070	175.572	207.836	-203.806	-229.427	182.215
		Field	1.902	0.784	148.241	-138.625	2.663	3.537	216.373	-185.239	-210.241	191.372	215.019	-186.594	-211.595	190.017
		Right support	14.312	5.019	147.619	-138.047	20.037	25.205	234.603	-165.329	-190.216	209.716	225.291	-174.642	-199.529	200.403
	436	Left support	-12.889	-4.083	138.777	-148.384	-18.045	-22.000	168.974	-233.052	-208.073	193.952	176.924	-225.102	-200.124	201.902
		Field	1.184	-0.150	139.554	-149.228	1.658	1.181	190.842	-213.453	-188.300	215.994	190.637	-213.658	-188.506	215.789
		Right support	13.816	4.216	142.751	-152.650	19.342	23.325	214.707	-198.854	-173.117	240.445	206.346	-207.215	-181.478	232.084
458	Left support	-14.506	-6.372	151.975	-142.084	-20.308	-27.602	194.920	-216.762	-242.479	169.204	205.644	-206.038	-231.755	179.928	
	Field	0.018	-1.584	148.832	-139.163	0.025	-2.513	212.604	-190.589	-215.729	187.464	214.182	-189.011	-214.150	189.043	
	Right support	12.591	2.828	148.375	-138.753	17.627	19.634	231.435	-170.544	-195.561	206.418	224.830	-177.149	-202.166	199.813	
Iantai 4	590	Left support	-60.535	-25.452	52.019	-48.857	-84.749	-113.365	-23.370	-164.597	-172.818	-31.591	20.242	-120.984	-12	

lantai 5	775	Left support	-60.499	-25.412	43.453	-40.984	-84.699	-113.258	-35.695	-153.907	-160.326	-42.115	7.867	-110.345	-116.765	1.447
		Field	11.557	5.052	40.126	-37.829	16.180	21.952	76.475	-32.662	-38.634	70.503	67.956	-41.181	-47.153	61.984
		Right support	60.528	25.714	43.349	-40.861	84.739	113.776	160.529	42.635	36.166	154.060	116.657	-1.237	-7.706	110.188
	783	Left support	-64.007	-26.504	37.947	-40.192	-89.610	-119.215	-51.534	-160.928	-155.091	-45.697	-5.828	-115.222	-109.385	0.009
		Field	10.774	4.325	35.284	-37.432	15.084	19.849	65.363	-36.440	-30.855	70.947	57.805	-43.997	-38.412	63.390
		Right support	60.324	25.047	38.965	-41.347	84.454	112.464	150.558	38.121	44.314	156.751	107.413	-5.023	1.170	113.607
	804	Left support	-60.758	-25.596	43.607	-41.108	-85.061	-113.863	-35.956	-154.557	-161.055	-42.454	7.867	-110.734	-117.231	1.370
		Field	10.987	4.702	40.295	-37.997	15.382	20.708	75.678	-33.931	-39.905	69.703	67.680	-41.929	-47.904	61.705
		Right support	60.173	25.446	43.516	-41.040	84.242	112.921	160.062	41.683	35.246	153.624	116.564	-1.815	-8.252	110.126
	835	Left support	-51.446	-16.250	40.126	-37.909	-72.024	-87.735	-20.479	-129.728	-135.492	-26.243	11.205	-98.044	-103.808	5.441
		Field	-4.380	-2.449	38.747	-36.523	-6.132	-9.174	47.875	-57.503	-63.285	42.093	51.638	-53.740	-59.522	45.856
		Right support	50.420	17.514	37.621	-35.436	70.588	88.526	131.998	29.719	24.038	126.317	99.358	-2.921	-8.602	93.677
	780	Left support	-11.483	-2.654	88.620	-83.747	-16.076	-18.026	110.558	-130.756	-143.425	97.888	116.657	-124.657	-137.327	103.987
		Field	2.338	1.129	86.111	-81.372	3.273	4.612	127.333	-107.143	-119.464	115.012	125.503	-108.973	-121.295	113.182
		Right support	14.578	5.294	86.479	-81.710	20.409	25.964	146.720	-88.745	-101.144	134.320	137.052	-98.412	-110.812	124.653
	806	Left support	-12.899	-4.172	82.578	-87.398	-18.059	-22.154	93.066	-144.900	-132.368	105.598	101.108	-126.858	-124.326	113.640
		Field	1.197	-0.238	82.288	-87.088	1.676	1.056	113.522	-123.605	-111.125	126.002	113.401	-123.726	-111.246	125.881
		Right support	13.852	4.129	84.576	-89.512	19.393	23.229	136.196	-107.527	-94.693	149.030	127.912	-115.812	-102.978	140.745
	828	Left support	-13.235	-6.876	89.179	-84.221	-18.529	-26.884	105.067	-137.693	-150.583	92.177	115.914	-126.846	-139.970	103.023
		Field	1.110	-2.159	87.288	-82.444	1.554	-2.122	124.283	-113.342	-125.937	111.688	126.109	-111.516	-124.111	113.514
		Right support	13.589	2.217	87.803	-82.934	19.025	19.854	144.369	-94.662	-107.322	131.710	138.076	-100.956	-113.616	125.416
lantai 6	960	Left support	-60.536	-25.364	32.415	-30.775	-84.750	-113.226	-51.642	-140.108	-144.372	-55.906	-8.117	-96.583	-100.847	-12.381
		Field	11.542	5.088	31.041	-29.447	16.159	21.991	63.352	-21.331	-25.475	59.208	54.802	-29.882	-34.026	50.657
		Right support	60.485	25.728	33.718	-31.955	84.679	113.747	146.573	54.631	50.047	141.989	102.700	10.757	6.174	98.116
	968	Left support	-64.308	-26.520	28.425	-29.926	-90.031	-119.602	-64.795	-146.487	-142.584	-60.893	-18.983	-100.674	-96.772	-15.080
		Field	10.452	4.258	25.563	-26.900	14.633	19.355	51.786	-21.662	-18.186	55.263	44.393	-29.055	-25.579	47.869
		Right support	59.910	24.927	27.205	-28.623	83.874	111.775	134.055	55.896	59.583	137.742	91.155	12.996	16.683	94.842
	989	Left support	-60.715	-25.585	32.615	-30.940	-85.001	-113.794	-51.777	-140.754	-145.109	-56.132	-7.978	-96.955	-101.310	-12.333
		Field	10.944	4.685	31.277	-29.682	15.322	20.629	62.563	-22.780	-26.927	58.416	54.594	-30.748	-34.895	50.447
		Right support	60.147	25.422	33.947	-32.198	84.206	112.852	146.174	53.571	49.023	141.626	102.708	10.105	5.557	98.160
	1020	Left support	-51.651	-16.306	28.237	-26.876	-72.311	-88.071	-37.939	-115.097	-118.636	-41.477	-6.138	-83.296	-86.834	-9.676
		Field	-4.558	-2.495	27.318	-25.940	-6.381	-9.462	31.107	-43.454	-47.037	27.525	34.970	-39.591	-43.174	31.387
		Right support	50.086	17.417	27.176	-25.739	70.120	87.970	116.429	42.348	38.612	112.693	83.986	9.905	6.169	80.250
	965	Left support	-11.452	-2.454	45.757	-44.045	-16.033	-17.669	48.891	-76.832	-81.283	44.439	54.780	-70.943	-75.394	50.329
		Field	2.282	1.330	44.127	-42.488	3.195	4.866	66.830	-54.431	-58.693	62.568	64.815	-56.446	-60.707	60.554
		Right support	14.360	5.488	45.058	-43.352	20.104	26.013	86.825	-36.949	-41.385	82.389	77.029	-46.745	-51.181	72.593
	991	Left support	-12.585	-4.228	44.349	-46.117	-17.619	-21.867	41.698	-84.955	-80.358	46.295	49.701	-76.951	-72.354	54.298
		Field	1.474	-0.280	43.478	-45.179	2.064	1.321	61.337	-62.782	-58.360	65.760	61.175	-62.945	-58.522	65.598
		Right support	14.097	4.098	45.071	-46.850	19.736	23.473	83.046	-45.643	-41.018	87.672	74.719	-53.970	-49.345	79.345
	1013	Left support	-13.295	-7.194	46.173	-44.356	-18.613	-27.464	42.584	-84.156	-88.880	37.860	53.767	-72.974	-77.698	49.043
		Field	1.004	-2.453	45.189	-43.417	1.406	-2.720	63.080	-60.969	-65.576	58.472	65.231	-58.817	-63.424	60.624
		Right support	13.451	1.932	46.230	-44.388	18.831	19.232	83.900	-42.965	-47.754	79.111	77.933	-48.932	-53.721	73.144
lantai ATAP	1145	Left support	-53.708	-10.024	21.524	-20.485	-75.191	-80.488	-43.717	-102.529	-105.231	-46.418	-17.580	-76.393	-79.094	-20.282
		Field	10.186	2.117	21.918	-20.830	14.260	15.610	45.678	-14.169	-16.998	42.849	40.505	-19.342	-22.171	37.677
		Right support	53.666	10.312	23.927	-22.709	75.132	80.898	108.940	43.649	40.483	105.773	82.528	17.238	14.071	79.361
	1153	Left support	-55.908	-10.734	18.955	-19.897	-78.271	-84.264	-51.852	-106.245	-103.795	-49.403	-24.345	-78.738	-76.289	-21.896
		Field	10.175	1.390	16.260	-17.025	14.245	14.434	35.905	-10.694	-8.705	37.894	31.463	-15.137	-13.148	33.452
		Right support	53.895	9.387	16.273	-17.017	75.453	79.693	96.397	49.791	51.725	98.331	70.841	24.235	26.170	72.776
	1174	Left support	-54.343	-10.214	21.505	-20.460	-76.080	-81.554	-44.692	-103.443	-106.160	-47.409	-18.175	-76.926	-79.643	-20.892
		Field	9.401	1.839	21.962	-20.872	13.161	14.224	44.521	-15.447	-18.281	41.687	39.862	-20.106	-22.940	37.028
		Right support	52.957	10.102	24.025	-22.803	74.140	79.712	108.019	42.459	39.282	104.841	82.030	16.470	13.293	78.852
	1205	Left support	-48.472	-7.323	19.587	-18.780	-67.861	-69.883	-37.583	-91.297	-93.395	-39.682	-15.719	-69.433	-71.531	-17.817
		Field	-4.907	-1.730	18.990	-18.207	-6.870	-8.656	19.437	-32.638	-34.674	17.402	22.640	-29.436	-31.472	20.604
		Right support	47.817	5.826	19.595	-18.710	66.944	66.702	91.170	37.543	35.242	88.869	70.999	17.372	15.071	68.698
	1150	Left support	-11.236	-0.567	5.824	-6.256	-15.730	-14.390	-6.156	-23.068	-21.945	-5.033	-2.218	-19.130	-18.007	-1.095
		Field	1.788	0.866	5.007	-5.470	2.503	3.531	9.744	-4.924	-3.720	10.947	8.341	-6.327	-5.123	9.545
		Right support	13.217	2.447	6.296	-6.676	18.504	19.776	26.894	8.733	9.721	20.482	2.321	3.309	21.470	
	1176	Left support	-11.977	-1.720	6.406	-6.001	-16.768	-17.124	-6.881	-24.251	-25.304	-7.934	-1.568	-18.938	-19.991	-2.621
		Field	1.286	-0.132	4.987	-4.481	1.800	1.332	8.697	-4.559	-5.874	7.381	8.443	-4.812	-6.128	7.127
		Right support	12.980	1.625	5.866	-5.396	18.172	18.176	25.695	9.929	8.707	24.473	20.176	4.410	3.188	18.954
	1198	Left support	-3.767	-2.628	9.665	-10.009	-5.274	-8.725	6.176	-21.367	-20.473	7.071	9.934	-17.609	-16.715	10.829
		Field	9.386	-0.961	9.258	-9.598	13.140	9.726	23.059	-3.339	-2.455	23.943	21.205	-5.194	-4.310	22.089
		Right support	20.615	0.688	10.702	-10.943	28.861	25.839	40.264	9.961	10.588	40.891	33.392	3.089	3.715	34.018
	1321	Left support	-48.698	-9.177	14.132	-14.734	-68.177	-73.121	-48.191	-88.603	-87.038	-46.626	-24.405	-64.817	-63.252	-22.839
		Field	12.407	3.234	12.871	-13.301	17.370	20.063	35.884	-0.757	0.361	37.002	28.928	-7.713	-6.595	30.046
		Right support	52.577	11.269	12.847	-13.229	73.608	81.123	92.118	55.612	56.605	93.111	65.076	28.570	29.563	66.069

Attachment VIII.4. Calculation of shear beam as-E

Floor	Beam No	Beam Position	Beam Dimension		Shear force need (V_u)		$V_{u,d}$	$V_{u,2h}$	begel reinforcement	
			b	h	$V_{u,kiri}^{(-)}$	$V_{u,kanan}^{(+)}$			In plastic hinge	Out plastic hinge
			(mm)	(mm)	(kN)	(kN)				
1st floor	30	Left support	300	500	170.146	156.699	116.151	77.760	2dp10-105	2dp10-215
		Field	300	500	-69.374	-31.536				
		Right support	300	500	152.683	164.474	120.288	88.870	2dp10-105	
	59	Left support	300	500	170.985	157.447	116.826	78.316	2dp10-105	2dp10-215
		Field	300	500	-69.267	-32.401				
		Right support	300	500	152.586	164.390	120.027	88.485	2dp10-105	
	93	Left support	300	500	148.080	133.894	102.924	70.818	2dp10-105	2dp10-215
		Field	300	500	-52.228	-61.549				
		Right support	300	500	136.133	148.982	101.523	67.777	2dp10-105	
	35	Left support	300	500	294.028	236.477	184.613	106.817	2dp10-105	2dp10-215
		Field	300	500	-191.336	-210.792				
		Right support	300	500	211.122	266.530	158.928	82.420	2dp10-105	
	61	Left support	300	500	255.758	255.758	144.188	64.859	2dp10-105	2dp10-215
		Field	300	500	-239.164	-237.687				
		Right support	300	500	263.425	263.425	150.460	70.139	2dp10-105	
	83	Left support	300	500	263.684	210.072	162.392	90.370	2dp10-105	2dp10-215
		Field	300	500	-185.648	-183.326				
		Right support	300	500	203.973	255.937	156.914	86.507	2dp10-105	
2nd floor	220	Left support	300	500	181.600	171.140	122.142	79.866	2dp10-105	2dp10-215
		Field	300	500	-82.153	-44.933				
		Right support	300	500	166.457	176.202	126.352	90.907	2dp10-105	
	228	Left support	300	500	176.949	176.949	116.148	72.916	2dp10-105	2dp10-215
		Field	300	500	-92.765	-53.648				
		Right support	300	500	185.471	185.471	131.566	93.239	2dp10-105	
	249	Left support	300	500	181.564	171.078	122.201	79.992	2dp10-105	2dp10-215
		Field	300	500	-81.770	-45.183				
		Right support	300	500	166.283	175.975	126.120	90.671	2dp10-105	
	280	Left support	300	500	156.599	146.428	107.295	72.238	2dp10-105	2dp10-215
		Field	300	500	-62.114	-73.614				
		Right support	300	500	145.402	154.541	103.109	66.539	2dp10-105	
	225	Left support	300	500	256.642	223.973	151.287	76.376	2dp10-105	2dp10-215
		Field	300	500	-210.714	-198.081				
		Right support	300	500	228.655	260.183	156.877	83.424	2dp10-105	
	251	Left support	300	500	259.790	259.790	146.481	65.916	2dp10-105	2dp10-215
		Field	300	500	-242.845	-241.271				
		Right support	300	500	267.364	267.364	152.703	71.176	2dp10-105	
	273	Left support	300	500	269.190	235.538	161.668	85.218	2dp10-105	2dp10-215
		Field	300	500	-207.775	-208.764				
		Right support	300	500	226.252	258.863	153.447	78.493	2dp10-105	

3rd floor	405	Left support	300	500	179.987	170.512	120.696	78.539	2dp10-105	2dp10-215
		Field	300	500	-83.027	-45.485				
		Right support	300	500	167.458	176.509	126.465	90.883	2dp10-105	
	413	Left support	300	500	179.327	179.327	118.438	75.144	2dp10-105	2dp10-215
		Field	300	500	-90.778	-55.235				
		Right support	300	500	181.921	181.921	128.459	90.446	2dp10-105	
	434	Left support	300	500	180.505	170.960	121.215	79.058	2dp10-105	2dp10-215
		Field	300	500	-82.506	-46.339				
		Right support	300	500	167.176	176.198	126.032	90.363	2dp10-105	
	465	Left support	300	500	155.249	146.151	106.694	72.169	2dp10-105	2dp10-215
		Field	300	500	-60.142	-73.398				
		Right support	300	500	143.347	151.646	100.914	64.843	2dp10-105	
	410	Left support	300	500	236.070	210.450	139.713	71.200	2dp10-105	2dp10-215
		Field	300	500	-191.372	-185.239				
		Right support	300	500	209.716	234.603	139.959	72.664	2dp10-105	
	436	Left support	300	500	233.052	233.052	131.824	59.848	2dp10-105	2dp10-215
		Field	300	500	-215.994	-213.453				
		Right support	300	500	240.445	240.445	138.123	65.370	2dp10-105	
	458	Left support	300	500	242.479	216.762	145.557	76.644	2dp10-105	2dp10-215
		Field	300	500	-187.464	-190.589				
		Right support	300	500	206.418	231.435	136.299	68.654	2dp10-105	
lantai 4	590	Left support	300	500	172.818	164.597	116.065	75.712	2dp10-105	2dp10-215
		Field	300	500	-78.939	-41.229				
		Right support	300	500	163.090	171.111	123.243	89.208	2dp10-105	
	598	Left support	300	500	172.264	172.264	114.704	73.777	2dp10-105	2dp10-215
		Field	300	500	-83.072	-47.942				
		Right support	300	500	171.739	171.739	122.217	87.005	2dp10-105	
	619	Left support	300	500	173.410	165.116	116.672	76.329	2dp10-105	2dp10-215
		Field	300	500	-78.282	-42.269				
		Right support	300	500	162.749	170.734	122.717	88.576	2dp10-105	
	650	Left support	300	500	147.873	140.203	102.550	70.323	2dp10-105	2dp10-215
		Field	300	500	-53.182	-67.617				
		Right support	300	500	136.739	143.972	96.274	62.359	2dp10-105	
	595	Left support	300	500	195.735	175.956	115.732	58.848	2dp10-105	2dp10-215
		Field	300	500	-159.156	-151.391				
		Right support	300	500	177.926	197.182	118.604	62.732	2dp10-105	
	621	Left support	300	500	195.475	195.475	111.424	51.662	2dp10-105	2dp10-215
		Field	300	500	-177.372	-175.052				
		Right support	300	500	201.264	201.264	116.432	56.114	2dp10-105	
	643	Left support	300	500	203.402	183.436	122.637	65.211	2dp10-105	2dp10-215
		Field	300	500	-154.870	-158.089				
		Right support	300	500	174.350	193.829	114.497	58.089	2dp10-105	

lantai 5	775	Left support	300	500	160.326	153.907	108.291	71.292	2dp10-105	2dp10-215
		Field	300	500	-70.503	-32.662				
		Right support	300	500	154.060	160.529	116.978	86.012	2dp10-105	
	783	Left support	300	500	160.928	160.928	108.657	71.490	2dp10-105	2dp10-215
		Field	300	500	-70.947	-36.440				
		Right support	300	500	156.751	156.751	113.200	82.234	2dp10-105	
	804	Left support	300	500	161.055	154.557	109.035	72.048	2dp10-105	2dp10-215
		Field	300	500	-69.703	-33.931				
		Right support	300	500	153.624	160.062	116.330	85.236	2dp10-105	
	835	Left support	300	500	135.492	129.728	95.459	66.995	2dp10-105	2dp10-215
		Field	300	500	-42.093	-57.503				
		Right support	300	500	126.317	131.998	89.279	58.905	2dp10-105	
	780	Left support	300	500	143.425	130.756	85.166	43.742	2dp10-105	2dp10-215
		Field	300	500	-115.012	-107.143				
		Right support	300	500	134.320	146.720	89.492	48.801	2dp10-105	
	806	Left support	300	500	144.900	144.900	83.831	40.409	2dp10-105	2dp10-215
		Field	300	500	-126.002	-123.605				
		Right support	300	500	149.030	149.030	87.570	43.871	2dp10-105	
	828	Left support	300	500	150.583	137.693	91.460	49.421	2dp10-105	2dp10-215
		Field	300	500	-111.688	-113.342				
		Right support	300	500	131.710	144.369	86.274	44.966	2dp10-105	
lantai 6	960	Left support	300	500	144.372	140.108	98.479	65.848	2dp10-105	2dp10-215
		Field	300	500	-59.208	-21.331				
		Right support	300	500	141.989	146.573	108.723	81.810	2dp10-105	
	968	Left support	300	500	146.487	146.487	101.007	68.669	2dp10-105	2dp10-215
		Field	300	500	-55.263	-21.662				
		Right support	300	500	137.742	137.742	101.808	76.258	2dp10-105	
	989	Left support	300	500	145.109	140.754	99.229	66.607	2dp10-105	2dp10-215
		Field	300	500	-58.416	-22.780				
		Right support	300	500	141.626	146.174	108.087	81.006	2dp10-105	
	1020	Left support	300	500	118.636	115.097	85.687	62.260	2dp10-105	2dp10-215
		Field	300	500	-27.525	-43.454				
		Right support	300	500	112.693	116.429	80.387	54.760	2dp10-105	
	965	Left support	300	500	81.283	76.832	48.855	25.798	2dp10-105	2dp10-215
		Field	300	500	-62.568	-54.431				
		Right support	300	500	82.389	86.825	54.982	32.340	2dp10-105	
	991	Left support	300	500	84.955	84.955	50.979	26.822	2dp10-105	2dp10-215
		Field	300	500	-65.760	-62.782				
		Right support	300	500	87.672	87.672	53.755	29.639	2dp10-105	
	1013	Left support	300	500	88.880	84.156	55.663	32.044	2dp10-105	2dp10-215
		Field	300	500	-58.472	-60.969				
		Right support	300	500	79.111	83.900	51.243	28.022	2dp10-105	

lantai ATAP	1145	Left support	300	500	105.231	102.529	71.849	48.114	2dp10-105	2dp10-215
		Field	300	500	-42.849	-14.169				
		Right support	300	500	105.773	108.940	81.188	61.455	2dp10-105	
	1153	Left support	300	500	106.245	106.245	73.752	50.648	2dp10-105	2dp10-215
		Field	300	500	-37.894	-10.694				
		Right support	300	500	98.331	98.331	73.754	56.279	2dp10-105	
	1174	Left support	300	500	106.160	103.443	72.831	49.133	2dp10-105	2dp10-215
		Field	300	500	-41.687	-15.447				
		Right support	300	500	104.841	108.019	80.186	60.396	2dp10-105	
	1205	Left support	300	500	93.395	91.297	68.419	50.659	2dp10-105	2dp10-215
		Field	300	500	-17.402	-32.638				
		Right support	300	500	88.869	91.170	63.260	43.416	2dp10-105	
	1150	Left support	300	500	23.068	23.068	15.400	9.948	2dp10-105	2dp10-215
		Field	300	500	-10.947	-4.924				
		Right support	300	500	27.882	27.882	20.486	15.228	2dp10-105	
	1176	Left support	300	500	25.304	24.251	17.936	12.697	2dp10-105	2dp10-215
		Field	300	500	-7.381	-4.559				
		Right support	300	500	24.473	25.695	18.875	14.026	2dp10-105	
	1198	Left support	300	500	21.367	21.367	11.153	3.890	2dp10-105	2dp10-215
		Field	300	500	-23.943	-3.339				
		Right support	300	500	40.891	40.891	30.920	23.831	2dp10-105	
	1321	Left support	300	500	88.603	88.603	60.288	40.156	2dp10-105	2dp10-215
		Field	300	500	-37.002	-0.757				
		Right support	300	500	93.111	93.111	71.951	56.905	2dp10-105	

Attachment VIII.5. Calculation of torque necessary combination the AS-E column due to load combination

Floor	Column No	Column Position	Moment Column (kNm)				Load Combination (kNm)									
			M _D	M _L	M _{Ex}	M _{Ey}	1,4M _D	1,2M _D +1,6M _L	1,2M _D +M _L +M _E		1,2M _D +M _L -M _E		0,9M _D +M _E		0,9M _D -M _E	
									(M _{Ex} +0,3.M _{Ey})	(0,3.M _{Ex} +M _{Ey})	(M _{Ex} +0,3.M _{Ey})	(0,3.M _{Ex} +M _{Ey})	(M _{Ex} +0,3.M _{Ey})	(0,3.M _{Ex} +M _{Ey})	(M _{Ex} +0,3.M _{Ey})	(0,3.M _{Ex} +M _{Ey})
Basement floor	136	Under	4.581	1.796	26.978	-28.719	6.414	8.371	25.655	-13.333	-11.069	27.919	22.485	-16.503	-14.239	24.749
		Above	-8.861	-3.466	140.219	-160.200	-12.406	-16.178	78.060	-132.233	-106.258	104.035	84.184	-126.109	-100.134	110.159
	140	Under	12.838	3.759	89.739	-76.470	17.973	21.419	85.962	-30.384	-47.634	68.712	78.352	-37.994	-55.244	61.102
		Above	-5.977	-1.748	176.596	-204.213	-8.368	-9.969	106.412	-160.155	-124.253	142.314	109.953	-156.614	-120.712	145.855
	144	Under	31.151	14.240	88.606	-75.701	43.611	60.164	117.516	2.501	-14.276	100.739	93.931	-21.084	-37.860	77.155
		Above	-14.492	-6.622	174.946	-202.054	-20.288	-27.984	90.318	-173.582	-138.341	125.559	101.287	-162.613	-127.372	136.528
	154	Under	29.479	13.643	87.825	-75.353	41.271	57.204	114.237	0.012	-16.201	98.023	91.750	-22.474	-38.688	75.537
		Above	-13.712	-6.344	171.621	-197.881	-19.196	-26.604	89.459	-169.193	-135.055	123.597	99.916	-158.735	-124.597	134.054
	164	Under	29.502	13.638	86.058	-74.041	41.303	57.222	112.886	0.816	-14.806	97.263	90.398	-21.672	-37.294	74.775
		Above	-13.721	-6.342	169.682	-195.427	-19.209	-26.612	88.247	-167.329	-133.861	121.716	98.705	-156.871	-123.403	132.173
	174	Under	30.523	14.441	84.563	-73.073	42.732	59.733	113.709	3.364	-11.573	98.772	90.111	-20.234	-35.171	75.174
		Above	-14.193	-6.715	166.015	-190.922	-19.870	-27.776	84.992	-164.864	-132.485	117.371	95.965	-153.891	-121.512	128.344
	184	Under	26.939	11.898	82.808	-71.751	37.715	51.363	105.507	-2.684	-17.058	91.133	85.527	-22.663	-37.037	71.153
		Above	-12.525	-5.533	163.964	-188.473	-17.535	-23.882	86.859	-159.847	-127.985	118.721	96.149	-150.557	-118.695	128.011
	188	Under	13.241	2.827	78.139	-68.056	18.537	20.413	76.438	-25.898	-39.006	63.330	69.639	-32.698	-45.805	56.531
		Above	-6.153	-1.315	159.030	-182.493	-8.614	-9.487	95.585	-143.481	-112.980	126.086	98.745	-140.321	-109.820	129.246
1st floor	321	Under	18.024	7.057	101.166	-85.687	25.233	32.919	104.145	-26.652	-46.775	84.022	91.681	-39.116	-59.239	71.558
		Above	4.581	1.796	26.978	-28.719	6.414	8.371	25.655	-13.333	-11.069	27.919	22.485	-16.503	-14.239	24.749
	325	Under	39.688	16.996	146.419	-127.869	55.563	74.819	172.679	-19.322	-43.437	148.565	143.777	-48.225	-72.339	119.663
		Above	-28.527	-10.849	144.628	-157.499	-39.937	-51.590	52.298	-159.191	-142.459	69.030	71.705	-139.784	-123.052	88.437
	329	Under	40.109	18.729	144.146	-126.270	56.152	78.096	173.124	-16.167	-39.405	149.886	142.362	-46.929	-70.167	119.124
		Above	-43.074	-19.870	143.488	-155.718	-60.304	-83.480	25.214	-184.230	-168.331	41.113	58.006	-151.438	-135.539	73.905
	339	Under	37.215	17.403	141.231	-123.885	52.101	72.503	166.126	-19.455	-42.005	143.576	137.558	-48.022	-70.572	115.009
		Above	-40.416	-18.786	142.338	-154.133	-56.582	-78.556	28.814	-178.716	-163.382	44.147	59.724	-147.805	-132.472	75.057
	349	Under	37.207	17.387	139.136	-122.396	52.090	72.467	164.452	-18.620	-40.382	142.690	135.903	-47.169	-68.931	114.141
		Above	-40.429	-18.774	140.762	-152.297	-56.600	-78.553	27.784	-177.357	-162.361	42.780	58.687	-146.454	-131.459	73.682
	359	Under	40.148	19.243	135.703	-119.351	56.208	78.966	167.318	-11.219	-32.477	146.061	136.031	-42.507	-63.764	114.773
		Above	-42.594	-20.266	138.729	-150.512	-59.632	-83.539	22.197	-180.272	-164.955	37.514	55.241	-147.228	-131.910	70.559
	369	Under	38.193	16.875	132.210	-116.133	53.470	72.832	160.077	-13.763	-34.663	139.177	131.744	-42.096	-62.996	110.844
		Above	-38.875	-17.172	136.160	-147.994	-54.425	-74.126	27.939	-170.969	-155.584	43.324	56.774	-142.134	-126.749	72.159
	373	Under	19.327	4.233	124.690	-109.453	27.058	29.966	119.280	-44.620	-64.428	99.472	109.248	-54.652	-74.459	89.441
		Above	-19.363	-4.184	130.301	-142.014	-27.109	-29.931	60.277	-130.344	-115.117	75.503	70.270	-120.351	-105.124	85.497
2nd floor	506	Under	41.094	15.979	139.731	-130.481	57.531	74.878	165.877	-23.271	-35.296	153.853	137.571	-51.578	-63.602	125.546
		Above	-45.991	-17.953	139.735	-148.847	-64.388	-83.914	21.939	-180.068	-168.223	33.784	53.689	-148.318	-136.473	65.534
	510	Under	48.823	21.647	131.103	-122.134	68.352	93.222	174.697	-2.569	-14.228	163.037	138.403	-38.862	-50.522	126.744
		Above	-49.133	-22.017	118.578	-126.510	-68.787	-94.187	-0.352	-171.913	-161.602	9.959	36.405	-135.156	-124.845	46.716
	514	Under	39.561	18.701	131.756	-122.584	55.385	77.394	161.155	-16.884	-28.807	149.231	130.586	-47.453	-59.376	118.662
		Above	-38.482	-18.185	118.900	-127.030	-53.875	-75.275	16.428	-155.723	-145.155	26.996	46.157	-125.994	-115.425	56.726
	524	Under	35.400	16.714	131.814	-122.363	49.560	69.222	154.299	-23.625	-35.911	142.012	126.965	-50.959	-63.245	114.678
		Above	-34.888	-16.440	119.703	-128.190	-48.844	-68.170	22.940	-150.585	-139.551	33.974	49.846	-123.679	-112.645	60.880
	534	Under	35.390	16.701	132.518	-122.862	49.547	69.190	154.829	-23.937	-36.490	142.275	127.511	-51.255	-63.808	114.958
		Above	-34.870	-16.423	120.360	-129.057	-48.817	-68.120	23.377	-151.215	-139.909	34.683	50.260	-124.332	-113.026	61.566
	544	Under	39.904	19.302	131.535	-121.661	55.866	78.768	162.223	-15.014	-27.849	149.388	130.950	-46.287	-59.122	118.114
		Above	-38.902	-18.794	120.458	-129.472	-54.463	-76.753	16.140	-158.811	-147.093	27.858	46.605	-128.346	-116.628	58.323
	554	Under	40.537	17.861	129.036	-119.132	56.752	77.222	159.803	-13.915	-26.791	146.927	129.780	-43.937	-56.813	116.904
		Above	-38.970	-17.195	118.440	-127.508	-54.558	-74.277	16.228	-155.935	-144.148	28.016	45.115	-127.049	-115.261	56.903
	558	Under	21.167	4.730	124.779	-114.897	29.634	32.969	120.441	-47.332	-60.180	107.593	109.360	-58.412	-71.260	96.513
		Above	-20.169	-4.487	115.272	-124.386	-28.237	-31.382	49.266	-118.494	-106.645	61.115	59.804	-107.957	-96.108	71.653

3rd floor	691	Under	40.523	15.707	121.001	-113.653	56.732	73.758	151.239	-13.018	-22.571	141.687	123.376	-40.882	-50.435	113.823
		Above	-38.557	-14.934	100.606	-106.638	-53.980	-70.163	7.412	-137.659	-129.817	15.253	33.913	-111.157	-103.315	41.755
	695	Under	50.875	22.432	121.151	-113.513	71.224	96.941	170.578	6.314	-3.615	160.649	132.884	-31.381	-41.310	122.955
		Above	-49.639	-21.840	103.015	-109.503	-69.494	-94.510	-11.242	-160.005	-151.570	-2.807	25.489	-123.273	-114.838	33.924
	699	Under	40.782	19.440	123.174	-115.231	57.095	80.042	156.983	-9.900	-20.227	146.657	125.309	-41.574	-51.901	114.982
		Above	-40.636	-19.284	104.536	-111.300	-56.891	-79.618	3.098	-147.987	-139.193	11.892	34.573	-116.512	-107.718	43.367
	709	Under	35.354	16.901	123.385	-115.158	49.495	69.467	148.163	-18.817	-29.512	137.469	120.656	-46.324	-57.019	109.961
		Above	-35.622	-16.928	104.891	-111.953	-49.870	-69.831	11.630	-140.160	-130.979	20.812	39.245	-112.545	-103.364	48.426
	719	Under	35.348	16.891	124.939	-116.454	49.487	69.443	149.312	-19.664	-30.694	138.281	121.816	-47.159	-58.189	110.786
		Above	-35.618	-16.918	106.108	-113.421	-49.865	-69.811	12.421	-141.249	-131.742	21.929	40.025	-113.645	-104.138	49.533
	729	Under	41.089	20.031	123.569	-114.898	57.524	81.357	158.438	-8.489	-19.762	147.165	126.080	-40.847	-52.120	114.807
		Above	-40.926	-19.877	105.122	-112.645	-57.296	-80.914	2.340	-150.097	-140.316	12.120	34.495	-117.942	-108.161	44.275
	739	Under	43.439	19.057	121.118	-112.388	60.815	82.617	158.586	-4.868	-16.219	147.236	126.497	-36.957	-48.307	115.147
		Above	-42.620	-18.726	102.784	-110.365	-59.668	-81.106	-0.196	-149.400	-139.545	9.659	31.317	-117.888	-108.033	41.172
	743	Under	23.230	5.236	117.244	-108.495	32.522	36.253	117.807	-40.211	-51.583	106.434	105.602	-52.415	-63.788	94.229
		Above	-22.595	-5.078	99.196	-106.795	-31.632	-35.239	34.966	-109.227	-99.350	44.844	46.823	-97.371	-87.493	56.701
4th floor	876	Under	43.834	16.613	104.261	-98.307	61.368	79.182	143.983	2.186	-5.555	136.243	114.220	-27.578	-35.318	106.480
		Above	-42.981	-16.488	80.068	-84.509	-60.173	-77.957	-13.349	-128.553	-122.780	-7.576	16.033	-99.171	-93.398	21.806
	880	Under	54.026	23.305	103.138	-96.981	75.637	102.119	162.179	22.096	14.093	154.176	122.667	-17.417	-25.420	114.664
		Above	-52.919	-23.113	78.912	-83.509	-74.086	-100.484	-32.757	-146.452	-140.475	-26.780	6.232	-107.463	-101.486	12.209
	884	Under	42.314	19.698	106.320	-99.763	59.239	82.294	146.866	2.608	-5.917	138.342	114.474	-29.784	-38.309	105.949
		Above	-41.567	-19.632	81.524	-86.480	-58.193	-81.292	-13.932	-131.535	-125.092	-7.490	18.170	-99.432	-92.990	24.612
	894	Under	35.919	16.699	106.608	-99.765	50.286	69.821	136.480	-7.981	-16.877	127.584	109.005	-35.456	-44.352	100.109
		Above	-35.496	-16.795	82.007	-87.226	-49.694	-69.467	-3.550	-122.014	-115.230	3.234	23.893	-94.570	-87.786	30.677
	904	Under	35.907	16.690	109.004	-101.853	50.270	69.793	138.226	-9.373	-18.669	128.931	110.764	-36.836	-46.132	101.468
		Above	-35.487	-16.785	84.017	-89.514	-49.681	-69.440	-2.206	-123.678	-116.531	4.940	25.225	-96.247	-89.101	32.371
	914	Under	42.610	20.265	107.273	-99.961	59.653	83.555	148.681	3.618	-5.888	139.175	115.633	-29.430	-38.936	106.127
		Above	-41.876	-20.212	82.759	-88.406	-58.627	-82.590	-14.225	-134.041	-126.700	-6.885	18.549	-101.266	-93.926	25.889
	924	Under	45.301	19.470	104.877	-97.475	63.422	85.513	149.466	7.820	-1.803	139.843	116.406	-25.241	-34.863	106.783
		Above	-44.690	-19.402	80.488	-86.203	-62.566	-84.672	-18.404	-135.087	-127.658	-10.974	14.406	-102.278	-94.848	21.836
	928	Under	24.553	5.473	101.646	-94.172	34.374	38.221	108.332	-28.741	-38.457	98.616	95.492	-41.581	-51.297	85.776
		Above	-24.145	-5.420	77.449	-83.192	-33.803	-37.645	18.097	-94.351	-86.884	25.564	30.760	-81.688	-74.221	38.227

5th floor	1061	Under	41.527	17.000	76.366	-72.590	58.138	77.034	121.423	17.153	12.244	116.513	91.964	-12.305	-17.215	87.055
		Above	-43.159	-16.852	49.107	-51.190	-60.423	-78.754	-34.893	-105.100	-102.392	-32.185	-5.094	-75.301	-72.593	-2.386
	1065	Under	51.125	23.945	75.600	-71.682	71.575	99.661	139.390	36.293	31.199	134.296	100.108	-2.989	-8.083	95.014
		Above	-53.194	-23.691	48.628	-50.781	-74.471	-101.739	-54.130	-123.716	-120.917	-51.331	-14.480	-84.067	-81.268	-11.682
	1069	Under	38.659	20.506	79.646	-75.306	54.123	79.200	123.951	15.484	9.842	118.309	91.847	-16.619	-22.261	86.206
		Above	-40.964	-20.104	52.194	-54.724	-57.350	-81.324	-33.485	-108.327	-105.037	-30.195	-1.091	-75.934	-72.644	2.198
	1079	Under	31.997	17.640	80.380	-75.812	44.796	66.621	113.673	4.339	-1.600	107.734	86.434	-22.900	-28.840	80.495
		Above	-34.295	-17.092	52.937	-55.612	-48.012	-68.501	-21.992	-97.977	-94.499	-18.515	5.388	-70.596	-67.119	8.866
	1089	Under	31.999	17.630	83.056	-78.195	44.798	66.606	115.625	2.750	-3.569	109.306	88.396	-24.479	-30.798	82.077
		Above	-34.288	-17.083	55.513	-58.448	-48.004	-68.479	-20.251	-100.024	-96.208	-16.435	7.119	-72.654	-68.838	10.935
	1099	Under	39.147	21.148	81.637	-76.682	54.806	80.813	126.757	15.934	9.492	120.315	93.865	-16.958	-23.400	87.423
		Above	-41.345	-20.700	54.233	-57.180	-57.883	-82.734	-33.235	-111.224	-107.393	-29.404	-0.131	-78.120	-74.289	3.699
	1109	Under	47.406	21.142	80.827	-75.750	66.368	90.714	136.130	26.526	19.927	129.531	100.766	-8.837	-15.436	94.167
		Above	-46.569	-20.279	52.684	-55.691	-65.196	-88.328	-40.185	-116.047	-112.138	-36.275	-5.935	-81.797	-77.888	-2.026
	1113	Under	26.852	6.233	78.577	-73.433	37.593	42.195	95.003	-11.404	-18.092	88.315	80.714	-25.692	-32.381	74.026
		Above	-25.818	-5.852	50.448	-53.421	-36.145	-40.344	-2.411	-75.119	-71.255	1.454	11.186	-61.522	-57.658	15.051
6th floor	1246	Under	63.889	17.358	41.916	-40.456	89.445	104.440	123.805	66.144	64.245	121.906	87.280	29.620	27.721	85.381
		Above	-51.163	-17.236	17.580	-17.834	-71.629	-88.973	-66.402	-91.191	-90.862	-66.072	-33.817	-58.607	-58.277	-33.487
	1250	Under	77.960	23.440	40.110	-38.752	109.144	131.057	145.477	90.274	88.508	143.711	98.649	43.445	41.680	96.883
		Above	-62.641	-23.828	16.593	-16.715	-87.697	-113.294	-87.419	-110.734	-110.575	-87.260	-44.798	-68.114	-67.955	-44.639
	1254	Under	62.101	17.743	47.286	-45.380	86.942	102.911	125.936	61.070	58.593	123.459	89.562	24.696	22.220	87.086
		Above	-48.489	-19.408	21.852	-22.392	-67.884	-89.239	-62.460	-93.431	-92.728	-61.757	-28.506	-59.476	-58.774	-27.803
	1264	Under	51.973	12.695	46.930	-45.053	72.762	82.680	108.477	44.088	41.648	106.037	80.190	15.801	13.361	77.750
		Above	-40.221	-15.596	22.349	-22.846	-56.309	-73.218	-48.366	-80.002	-79.356	-47.720	-20.704	-52.340	-51.694	-20.058
	1274	Under	51.923	12.701	52.674	-50.372	72.692	82.629	112.570	40.439	37.446	109.578	84.292	12.161	9.168	81.300
		Above	-40.204	-15.592	26.217	-27.000	-56.285	-73.192	-45.719	-82.971	-81.954	-44.701	-18.066	-55.318	-54.300	-17.048
	1284	Under	62.239	17.997	48.562	-46.518	87.134	103.481	127.289	60.733	58.076	124.632	90.621	24.065	21.408	87.964
		Above	-48.871	-19.891	23.998	-24.558	-68.419	-90.470	-61.905	-95.894	-95.166	-61.177	-27.353	-61.342	-60.614	-26.625
	1294	Under	44.019	13.380	39.443	-37.457	61.626	74.230	94.408	40.578	37.996	91.826	67.823	13.993	11.410	65.241
		Above	-46.229	-17.934	19.783	-20.327	-64.720	-84.169	-59.723	-87.800	-87.094	-59.017	-27.921	-55.998	-55.291	-27.214
	1298	Under	21.624	3.406	37.656	-35.739	30.274	31.399	56.290	4.913	2.421	53.797	46.397	-4.980	-7.473	43.904
		Above	-24.914	-5.096	18.196	-18.600	-34.880	-38.050	-22.377	-48.134	-47.609	-21.852	-9.807	-35.564	-35.039	-9.282
	1308	Under	53.747	11.347	28.498	-27.603	75.246	82.652	96.061	56.790	55.627	94.898	68.590	29.319	28.155	67.426
		Above	-35.107	-6.313	15.681	-15.879	-49.150	-52.230	-37.524	-59.617	-59.359	-37.267	-20.679	-42.772	-42.514	-20.422
	1316	Under	63.343	17.264	29.485	-28.592	88.680	103.634	114.183	73.529	72.368	113.022	77.916	37.262	36.101	76.755
		Above	-52.041	-13.069	16.730	-16.951	-72.857	-83.358	-63.872	-87.449	-87.162	-63.585	-35.192	-58.769	-58.482	-34.904

Attachment VIII.6. Calculation of axial force necessary combination of the AS-E column due to load combination

Floor	Column No	Column Position	Axial force Column (kNm)				Load Combination (kNm)									
			P _D	P _L	P _{Ex}	P _{Ey}	1,4P _D	1,2P _D +1,6P _L	1,2P _D +P _L +P _E		1,2P _D +P _L -P _E		0,9P _D +P _E		0,9P _D -P _E	
									(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})	(P _{Ex} +0,3.P _{Ey})	(0,3.P _{Ex} +P _{Ey})
Basement floor	136	Under	-943.274	-210.494	50.046	-53.327	-1320.584	-1468.719	-1308.375	-1380.736	-1376.471	-1304.110	-814.899	-887.260	-882.995	-810.633
		Above	-990.314	-210.494	50.046	-53.327	-1386.440	-1525.167	-1364.823	-1437.184	-1432.919	-1360.558	-857.235	-929.596	-925.331	-852.969
	140	Under	-1212.992	-319.282	288.134	-308.947	-1698.189	-1966.442	-1579.423	-1997.379	-1970.322	-1552.366	-896.243	-1314.200	-1287.143	-869.186
		Above	-1260.032	-319.282	288.134	-308.947	-1764.045	-2022.890	-1635.871	-2053.827	-2026.770	-1608.814	-938.579	-1356.536	-1329.479	-911.522
	144	Under	-1323.281	-376.496	807.306	-753.613	-1852.593	-2190.331	-1383.211	-2475.854	-2545.655	-1453.012	-609.731	-1702.374	-1772.175	-679.532
		Above	-1370.321	-376.496	807.306	-753.613	-1918.449	-2246.779	-1439.659	-2532.302	-2602.103	-1509.460	-652.067	-1744.710	-1814.511	-721.868
	154	Under	-1358.761	-398.634	227.853	-242.911	-1902.265	-2268.328	-1874.168	-2203.702	-2184.127	-1854.592	-1067.905	-1397.440	-1377.865	-1048.330
		Above	-1405.801	-398.634	227.853	-242.911	-1968.121	-2324.776	-1930.616	-2260.150	-2240.575	-1911.040	-1110.241	-1439.776	-1420.201	-1090.666
	164	Under	-1363.091	-398.556	805.400	-750.845	-1908.327	-2273.399	-1454.119	-2543.490	-2614.412	-1525.040	-646.635	-1736.007	-1806.928	-717.557
		Above	-1410.131	-398.556	805.400	-750.845	-1974.183	-2329.847	-1510.567	-2599.938	-2670.860	-1581.488	-688.971	-1778.343	-1849.264	-759.893
	174	Under	-1341.410	-376.653	240.603	-255.169	-1877.974	-2212.337	-1822.293	-2169.333	-2150.397	-1803.357	-1043.217	-1390.257	-1371.321	-1024.281
		Above	-1388.450	-376.653	240.603	-255.169	-1943.830	-2268.785	-1878.741	-2225.781	-2206.845	-1859.805	-1085.553	-1432.593	-1413.657	-1066.617
	184	Under	-1304.354	-323.490	811.546	-755.780	-1826.096	-2082.809	-1303.903	-2401.031	-2473.527	-1376.399	-589.107	-1686.235	-1758.731	-661.602
		Above	-1351.394	-323.490	811.546	-755.780	-1891.952	-2139.257	-1360.351	-2457.479	-2529.975	-1432.847	-631.443	-1728.571	-1801.067	-703.938
	188	Under	-921.366	-100.009	568.833	-530.100	-1289.912	-1265.654	-795.845	-1565.098	-1615.451	-846.198	-419.426	-1188.680	-1239.032	-469.779
		Above	-968.406	-100.009	568.833	-530.100	-1355.768	-1322.102	-852.293	-1621.546	-1671.899	-902.646	-461.762	-1231.016	-1281.368	-512.115
1st floor	321	Under	-896.234	-210.494	50.042	-53.321	-1254.728	-1412.271	-1251.929	-1324.283	-1320.021	-1247.666	-772.565	-844.919	-840.656	-768.302
		Above	-943.274	-210.494	50.042	-53.321	-1320.584	-1468.719	-1308.377	-1380.731	-1376.469	-1304.114	-814.901	-887.255	-882.992	-810.638
	325	Under	-1111.965	-306.734	179.697	-191.134	-1556.751	-1825.132	-1518.735	-1778.317	-1763.449	-1503.867	-878.412	-1137.993	-1123.125	-863.544
		Above	-1159.005	-306.734	179.697	-191.134	-1622.607	-1881.580	-1575.183	-1834.765	-1819.897	-1560.315	-920.748	-1180.329	-1165.461	-905.880
	329	Under	-1110.553	-310.237	585.886	-550.046	-1554.774	-1829.043	-1222.028	-2017.181	-2063.773	-1268.620	-578.626	-1373.778	-1420.370	-625.218
		Above	-1157.593	-310.237	585.886	-550.046	-1620.630	-1885.491	-1278.476	-2073.629	-2120.221	-1325.068	-620.962	-1416.114	-1462.706	-667.554
	339	Under	-1156.019	-336.070	171.970	-182.377	-1618.427	-1924.935	-1606.036	-1854.079	-1840.550	-1592.507	-923.160	-1171.203	-1157.674	-909.631
		Above	-1203.059	-336.070	171.970	-182.377	-1684.283	-1981.383	-1662.484	-1910.527	-1896.998	-1648.955	-965.496	-1213.539	-1200.010	-951.967
	349	Under	-1160.021	-335.964	602.702	-564.824	-1624.029	-1929.568	-1294.734	-2112.003	-2161.244	-1343.976	-610.764	-1428.032	-1477.274	-660.006
		Above	-1207.061	-335.964	602.702	-564.824	-1689.885	-1986.016	-1351.182	-2168.451	-2217.692	-1400.424	-653.100	-1470.368	-1519.610	-702.342
	359	Under	-1137.724	-313.119	182.887	-192.969	-1592.814	-1866.259	-1553.392	-1816.491	-1803.384	-1540.285	-898.955	-1162.055	-1148.948	-885.849
		Above	-1184.764	-313.119	182.887	-192.969	-1658.670	-1922.707	-1609.840	-1872.939	-1859.832	-1596.733	-941.291	-1204.391	-1191.284	-928.185
	369	Under	-1112.814	-269.430	607.492	-568.788	-1557.940	-1766.465	-1167.951	-1991.347	-2041.662	-1218.266	-564.677	-1388.073	-1438.388	-614.992
		Above	-1159.854	-269.430	607.492	-568.788	-1623.796	-1822.913	-1224.399	-2047.795	-2098.110	-1274.714	-607.013	-1430.409	-1480.724	-657.328
	373	Under	-795.255	-85.402	452.085	-423.503	-1113.357	-1090.949	-714.674	-1327.586	-1364.742	-751.831	-390.695	-1003.607	-1040.764	-427.852
		Above	-842.295	-85.402	452.085	-423.503	-1179.213	-1147.397	-771.122	-1384.034	-1421.190	-808.279	-433.031	-1045.943	-1083.100	-470.188
2nd floor	506	Under	-727.228	-167.836	64.777	-69.206	-1018.119	-1141.211	-996.494	-1090.283	-1084.525	-990.737	-610.490	-704.278	-698.520	-604.732
		Above	-774.268	-167.836	64.777	-69.206	-1083.975	-1197.659	-1052.942	-1146.731	-1140.973	-1047.185	-652.826	-746.614	-740.856	-647.068
	510	Under	-903.426	-244.338	130.105	-137.764	-1264.796	-1475.052	-1239.673	-1427.182	-1417.225	-1229.717	-724.308	-911.816	-901.859	-714.351
		Above	-950.466	-244.338	130.105	-137.764	-1330.652	-1531.500	-1296.121	-1483.630	-1473.673	-1286.165	-766.644	-954.152	-944.195	-756.687
	514	Under	-914.283	-251.359	379.447	-358.561	-1279.996	-1499.314	-1076.620	-1593.226	-1620.377	-1103.772	-550.976	-1067.582	-1094.733	-578.128
		Above	-961.323	-251.359	379.447	-358.561	-1345.852	-1555.762	-1133.068	-1649.674	-1676.825	-1160.220	-593.312	-1109.918	-1137.069	-620.464
	524	Under	-952.735	-273.578	113.710	-119.853	-1333.829	-1581.007	-1339.106	-1502.600	-1494.614	-1331.120	-779.707	-943.202	-935.216	-771.722
		Above	-999.775	-273.578	113.710	-119.853	-1399.685	-1637.455	-1395.554	-1559.048	-1551.062	-1387.568	-822.043	-985.538	-977.552	-814.058
	534	Under	-956.662	-273.566	392.786	-370.402	-1339.327	-1585.700	-1139.895	-1674.127	-1703.226	-1168.994	-579.330	-1113.562	-1142.661	-608.430
		Above	-1003.702	-273.566	392.786	-370.402	-1405.183	-1642.148	-1196.343	-1730.575	-1759.674	-1225.442	-621.666	-1155.898	-1184.997	-650.766
	544	Under	-937.048	-252.183	122.509	-128.455	-1311.867	-1527.950	-1292.668	-1468.343	-1460.613	-1284.938	-759.371	-935.046	-927.316	-751.641
		Above	-984.088	-252.183	122.509	-128.455	-1377.723	-1584.398	-1349.116	-1524.791	-1517.061	-1341.386	-801.707	-977.382	-969.652	-793.977
	554	Under	-928.674	-217.854	393.999	-371.349	-1300.144	-1462.975	-1049.669	-1585.412	-1614.857	-1079.114	-553.212	-1088.956	-1118.401	-582.657
		Above	-975.714	-217.854	393.999	-371.349	-1366.000	-1519.423	-1106.117	-1641.860	-1671.305	-1135.562	-595.548	-1131.292	-1160.737	-624.993
	558	Under	-672.775	-71.503	325.312	-306.547	-941.885	-921.735	-645.485	-1087.786	-1112.181	-669.880	-372.150	-814.451	-838.845	-396.544
		Above	-719.815	-71.503	325.312	-306.547	-1007.741	-978.183	-701.933	-1144.234	-1168.629	-726.328	-414.486	-856.787	-881.181	-438.880

3rd floor	691	Under	-565.384	-127.696	72.488	-77.375	-791.538	-882.774	-756.881	-861.785	-855.432	-750.528	-459.570	-564.474	-558.121	-453.217
		Above	-612.424	-127.696	72.488	-77.375	-857.394	-939.222	-813.329	-918.233	-911.880	-806.976	-501.906	-606.810	-600.457	-495.553
	695	Under	-704.796	-186.130	82.523	-86.868	-986.714	-1143.563	-975.423	-1093.996	-1088.348	-969.774	-577.854	-696.428	-690.779	-572.205
		Above	-751.836	-186.130	82.523	-86.868	-1052.570	-1200.011	-1031.871	-1150.444	-1144.796	-1026.222	-620.190	-738.764	-733.115	-614.541
	699	Under	-717.015	-192.474	203.648	-194.283	-1003.821	-1168.376	-907.529	-1186.081	-1198.255	-919.703	-499.950	-778.502	-790.677	-512.125
		Above	-764.055	-192.474	203.648	-194.283	-1069.677	-1224.824	-963.977	-1242.529	-1254.703	-976.151	-542.286	-820.838	-833.013	-554.461
	709	Under	-749.613	-211.301	62.976	-65.813	-1049.458	-1237.617	-1067.605	-1157.757	-1154.069	-1063.916	-631.420	-721.572	-717.884	-627.732
		Above	-796.653	-211.301	62.976	-65.813	-1115.314	-1294.065	-1124.053	-1214.205	-1210.517	-1120.364	-673.756	-763.908	-760.220	-670.068
	719	Under	-752.740	-211.166	215.121	-204.618	-1053.836	-1241.154	-960.718	-1254.536	-1268.190	-974.372	-523.730	-817.548	-831.202	-537.384
		Above	-799.780	-211.166	215.121	-204.618	-1119.692	-1297.602	-1017.166	-1310.984	-1324.638	-1030.820	-566.066	-859.884	-873.538	-579.720
	729	Under	-738.238	-192.897	70.837	-73.661	-1033.533	-1194.521	-1030.044	-1131.193	-1127.521	-1026.373	-615.676	-716.824	-713.153	-612.004
		Above	-785.278	-192.897	70.837	-73.661	-1099.389	-1250.969	-1086.492	-1187.641	-1183.969	-1082.821	-658.012	-759.160	-755.489	-654.340
4th floor	739	Under	-749.348	-167.738	211.436	-201.245	-1049.087	-1167.598	-915.893	-1204.770	-1218.018	-929.141	-523.351	-812.227	-825.476	-536.599
		Above	-796.388	-167.738	211.436	-201.245	-1114.943	-1224.046	-972.341	-1261.218	-1274.466	-985.589	-565.687	-854.563	-867.812	-578.935
	743	Under	-552.716	-58.054	210.171	-199.545	-773.802	-756.146	-571.006	-857.807	-871.621	-584.820	-347.137	-633.938	-647.752	-360.951
		Above	-599.756	-58.054	210.171	-199.545	-839.658	-812.594	-627.454	-914.255	-928.069	-641.268	-389.473	-676.274	-690.088	-403.287
	876	Under	-406.546	-88.582	68.639	-73.173	-569.164	-629.586	-529.750	-629.019	-623.124	-523.856	-319.204	-418.473	-412.579	-313.310
		Above	-453.586	-88.582	68.639	-73.173	-635.020	-686.034	-586.198	-685.467	-679.572	-580.304	-361.540	-460.809	-454.915	-355.646
	880	Under	-509.724	-129.224	43.040	-44.805	-713.614	-818.427	-711.294	-772.786	-770.491	-709.000	-429.153	-490.645	-488.350	-426.859
		Above	-556.764	-129.224	43.040	-44.805	-779.470	-874.875	-767.742	-829.234	-826.939	-765.448	-471.489	-532.981	-530.686	-469.195
	884	Under	-521.573	-134.606	70.284	-69.059	-730.202	-841.257	-710.927	-808.467	-810.060	-712.520	-419.849	-517.390	-518.982	-421.442
		Above	-568.613	-134.606	70.284	-69.059	-796.058	-897.705	-767.375	-864.915	-866.508	-768.968	-462.185	-559.726	-561.318	-463.778
	894	Under	-546.296	-149.032	23.835	-24.268	-764.814	-894.006	-788.033	-821.705	-821.142	-787.470	-475.112	-508.784	-508.221	-474.549
		Above	-593.336	-149.032	23.835	-24.268	-830.670	-950.454	-844.481	-878.153	-877.590	-843.918	-517.448	-551.120	-550.557	-516.885
5th floor	904	Under	-548.718	-148.890	78.881	-76.929	-768.205	-896.686	-751.549	-860.616	-863.154	-754.087	-438.044	-547.111	-549.649	-440.582
		Above	-595.758	-148.890	78.881	-76.929	-834.061	-953.134	-807.997	-917.064	-919.602	-810.535	-480.380	-589.447	-591.985	-482.918
	914	Under	-540.426	-134.772	30.855	-31.441	-756.596	-864.146	-761.861	-805.468	-804.706	-761.099	-464.961	-508.568	-507.806	-464.199
		Above	-587.466	-134.772	30.855	-31.441	-822.452	-920.594	-818.309	-861.916	-861.154	-817.547	-507.297	-550.904	-550.142	-506.535
	924	Under	-574.424	-118.733	69.915	-68.793	-804.194	-879.282	-758.765	-855.860	-857.319	-760.223	-467.705	-564.800	-566.259	-469.163
		Above	-621.464	-118.733	69.915	-68.793	-870.050	-935.730	-815.213	-912.308	-913.767	-816.671	-510.041	-607.136	-608.595	-511.499
	928	Under	-434.737	-44.984	114.923	-110.622	-608.632	-593.659	-484.932	-642.814	-648.405	-490.523	-309.527	-467.408	-473.000	-315.118
		Above	-481.777	-44.984	114.923	-110.622	-674.488	-650.107	-541.380	-699.262	-704.853	-546.971	-351.863	-509.744	-515.336	-357.454
	1061	Under	-249.997	-50.176	54.688	-58.227	-349.996	-380.278	-312.953	-391.993	-387.392	-308.352	-187.777	-266.818	-262.217	-183.177
		Above	-297.037	-50.176	54.688	-58.227	-415.852	-436.726	-369.401	-448.441	-443.840	-364.800	-230.113	-309.154	-304.553	-225.513
	1065	Under	-317.457	-73.365	14.645	-14.778	-444.440	-498.332	-444.102	-464.698	-464.525	-443.929	-275.500	-296.096	-295.923	-275.327
		Above	-364.497	-73.365	14.645	-14.778	-510.296	-554.780	-500.550	-521.146	-520.973	-500.377	-317.836	-338.432	-338.259	-317.663
	1069	Under	-327.000	-77.238	22.796	-31.341	-457.800	-515.981	-456.244	-494.140	-483.032	-445.136	-280.906	-318.802	-307.694	-269.798
		Above	-374.040	-77.238	22.796	-31.341	-523.656	-572.429	-512.692	-550.588	-539.480	-501.584	-323.242	-361.138	-350.030	-312.134
	1079	Under	-342.935	-86.800	8.273	-5.804	-480.109	-550.402	-491.790	-501.644	-504.854	-495.000	-302.110	-311.964	-315.173	-305.319
		Above	-389.975	-86.800	8.273	-5.804	-545.965	-606.850	-548.238	-558.092	-561.302	-551.448	-344.446	-354.300	-357.509	-347.655
	1089	Under	-344.601	-86.681	18.874	-26.822	-482.441	-552.211	-489.375	-521.362	-511.030	-479.042	-299.314	-331.301	-320.968	-288.981
		Above	-391.641	-86.681	18.874	-26.822	-548.297	-608.659	-545.823	-577.810	-567.478	-535.490	-341.650	-373.637	-363.304	-331.317
	1099	Under	-342.505	-77.346	5.420	-4.876	-479.507	-534.760	-484.395	-491.602	-492.309	-485.102	-304.297	-311.505	-312.212	-305.005
		Above	-389.545	-77.346	5.420	-4.876	-545.363	-591.208	-540.843	-548.050	-548.757	-541.550	-346.633	-353.841	-354.548	-347.341
	1109	Under	-403.554	-70.493	30.124	-39.467	-564.976	-597.054	-536.474	-585.188	-573.042	-524.328	-344.915	-393.628	-381.483	-332.769
		Above	-450.594	-70.493	30.124	-39.467	-630.832	-653.502	-592.922	-641.636	-629.490	-580.776	-387.251	-435.964	-423.819	-375.105
	1113	Under	-318.436	-32.205	46.309	-46.084	-445.810	-433.651	-381.844	-446.520	-446.812	-382.137	-254.109	-318.784	-319.076	-254.401
		Above	-365.476	-32.205	46.309	-46.084	-511.666	-490.099	-438.292	-502.968	-503.260	-438.585	-296.445	-361.120	-361.412	-296.737

6th floor	1246	Under	-96.375	-12.344	29.703	-31.563	-134.925	-135.400	-107.760	-150.646	-148.228	-105.342	-66.503	-109.390	-106.972	-64.085
		Above	-143.415	-12.344	29.703	-31.563	-200.781	-191.848	-164.208	-207.094	-204.676	-161.790	-108.839	-151.726	-149.308	-106.421
	1250	Under	-129.361	-18.042	3.772	-2.881	-181.105	-184.100	-170.368	-175.025	-176.183	-171.526	-113.517	-118.174	-119.333	-114.676
		Above	-176.401	-18.042	3.772	-2.881	-246.961	-240.548	-226.816	-231.473	-232.631	-227.974	-155.853	-160.510	-161.669	-157.012
	1254	Under	-133.752	-20.394	29.044	-34.348	-187.253	-193.133	-162.157	-206.531	-199.636	-155.262	-101.637	-146.012	-139.116	-94.742
		Above	-180.792	-20.394	29.044	-34.348	-253.109	-249.581	-218.605	-262.979	-256.084	-211.710	-143.973	-188.348	-181.452	-137.078
	1264	Under	-139.920	-24.501	10.814	-9.038	-195.888	-207.106	-184.302	-198.199	-200.508	-186.611	-117.825	-131.722	-134.031	-120.134
		Above	-186.960	-24.501	10.814	-9.038	-261.744	-263.554	-240.750	-254.647	-256.956	-243.059	-160.161	-174.058	-176.367	-162.470
	1274	Under	-140.224	-24.481	28.081	-33.423	-196.314	-207.438	-174.696	-217.749	-210.804	-167.751	-108.148	-151.200	-144.256	-101.203
		Above	-187.264	-24.481	28.081	-33.423	-262.170	-263.886	-231.144	-274.197	-267.252	-224.199	-150.484	-193.536	-186.592	-143.539
	1284	Under	-145.992	-20.537	6.016	-4.463	-204.389	-208.050	-191.050	-198.386	-200.405	-193.069	-126.716	-134.051	-136.070	-128.735
		Above	-193.032	-20.537	6.016	-4.463	-270.245	-264.498	-247.498	-254.834	-256.853	-249.517	-169.052	-176.387	-178.406	-171.071
	1294	Under	-234.459	-21.880	45.947	-50.423	-328.243	-316.359	-272.411	-339.870	-334.051	-266.592	-180.193	-247.652	-241.833	-174.374
		Above	-281.499	-21.880	45.947	-50.423	-394.099	-372.807	-328.859	-396.318	-390.499	-323.040	-222.529	-289.988	-284.169	-216.710
	1298	Under	-203.116	-19.490	10.639	-11.891	-284.362	-274.923	-256.158	-271.929	-270.301	-254.530	-175.733	-191.504	-189.876	-174.105
		Above	-250.156	-19.490	10.639	-11.891	-350.218	-331.371	-312.606	-328.377	-326.749	-310.978	-218.069	-233.840	-232.212	-216.441
	1308	Under	-94.234	-16.746	3.119	-3.389	-131.928	-139.874	-127.725	-132.280	-131.929	-127.374	-82.708	-87.264	-86.913	-82.357
		Above	-141.274	-16.746	3.119	-3.389	-197.784	-196.322	-184.173	-188.728	-188.377	-183.822	-125.044	-129.600	-129.249	-124.693
	1316	Under	-83.609	-10.283	27.963	-29.912	-117.053	-116.784	-91.624	-132.137	-129.603	-89.091	-56.259	-96.771	-94.238	-53.725
		Above	-130.649	-10.283	27.963	-29.912	-182.909	-173.232	-148.072	-188.585	-186.051	-145.539	-98.595	-139.107	-136.574	-96.061

Attachment VIII.7. Calculation of longitudinal reinforcement biaxial column as-E

Floor	Column No	Column Position	Column Dimension		s	M _{u,x}	M _{c,x}	P _{u,x}		A _{st,x}	Reinforcement installed	s	M _{u,y}	M _{c,y}	P _{u,y}		A _{st,y}	Reinforcement installed	A _{st,total}	Reinforcement installed
			b	h																
			(mm)	(mm)	X direction	(kNm)	(kNm)	(kN)	(%)	(mm ²)	X direction	Y direction	(kNm)	(kNm)	(kN)	(%)	(mm ²)	Y direction	(mm ²)	total
Basement floor	136	Under	500	700	-0.137	25.655	-3.521	1376.471	1	3500	10D22	-0.116	27.919	-3.244	1304.110	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	106.258	-14.584	1432.919	1			-0.116	132.233	-15.365	1360.558	1				
	140	Under	500	700	-0.137	85.962	-11.798	1970.322	1	3500	10D22	-0.116	68.712	-7.984	1552.366	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	124.253	-17.054	2026.770	1			-0.116	160.155	-18.610	1608.814	1				
	144	Under	500	700	-0.137	117.516	-16.129	2545.655	1	3500	10D22	-0.116	100.739	-11.706	1453.012	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	138.341	-18.988	2602.103	1			-0.116	173.582	-20.170	1509.460	1				
	154	Under	500	700	-0.137	114.237	-15.679	2184.127	1	3500	10D22	-0.116	98.023	-11.390	1854.592	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	135.055	-18.537	2240.575	1			-0.116	169.193	-19.660	1911.040	1				
	164	Under	500	700	-0.137	112.886	-15.494	2614.412	1	3500	10D22	-0.116	97.263	-11.302	1525.040	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	133.861	-18.373	2670.860	1			-0.116	167.329	-19.444	1581.488	1				
	174	Under	500	700	-0.137	113.709	-15.607	2150.397	1	3500	10D22	-0.116	98.772	-11.477	1803.357	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	132.485	-18.184	2206.845	1			-0.116	164.864	-19.157	1859.805	1				
	184	Under	500	700	-0.137	105.507	-14.481	2473.527	1	3500	10D22	-0.116	91.133	-10.590	1376.399	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	127.985	-17.566	2529.975	1			-0.116	159.847	-18.574	1432.847	1				
	188	Under	500	700	-0.137	76.438	-10.491	1615.451	1	3500	10D22	-0.116	63.330	-7.359	846.198	1	3500	10D22	7000	20D22
		Above	500	700	-0.137	112.980	-15.507	1671.899	1			-0.116	143.481	-16.672	902.646	1				
1st floor	321	Under	500	700	-0.131	104.145	-13.632	1320.021	1	3500	10D22	-0.149	84.022	-12.526	1247.666	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	25.655	-3.358	1376.469	1			-0.149	27.919	-4.162	1304.114	1				
	325	Under	500	700	-0.131	172.679	-22.603	1763.449	1	3500	10D22	-0.149	148.565	-22.148	1503.867	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	142.459	-18.648	1819.897	1			-0.149	159.191	-23.732	1560.315	1				
	329	Under	500	700	-0.131	173.124	-22.661	2063.773	1	3500	10D22	-0.149	149.886	-22.345	1268.620	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	168.331	-22.034	2120.221	1			-0.149	184.230	-27.465	1325.068	1				
	339	Under	500	700	-0.131	166.126	-21.745	1840.550	1	3500	10D22	-0.149	143.576	-21.404	1592.507	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	163.382	-21.386	1896.998	1			-0.149	178.716	-26.643	1648.955	1				
	349	Under	500	700	-0.131	164.452	-21.526	2161.244	1	3500	10D22	-0.149	142.690	-21.272	1343.976	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	162.361	-21.253	2217.692	1			-0.149	177.357	-26.440	1400.424	1				
	359	Under	500	700	-0.131	167.318	-21.901	1803.384	1	3500	10D22	-0.149	146.061	-21.775	1540.285	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	164.955	-21.592	1859.832	1			-0.149	180.272	-26.875	1596.733	1				
	369	Under	500	700	-0.131	160.077	-20.954	2041.662	1	3500	10D22	-0.149	139.177	-20.748	1218.266	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	155.584	-20.365	2098.110	1			-0.149	170.969	-25.488	1274.714	1				
	373	Under	500	700	-0.131	119.280	-15.613	1364.742	1	3500	10D22	-0.149	99.472	-14.829	751.831	1	3500	10D22	7000	20D22
		Above	500	700	-0.131	115.117	-15.069	1421.190	1			-0.149	130.344	-19.432	808.279	1				
2nd floor	506	Under	500	700	-0.128	165.877	-21.245	1084.525	1	3500	10D22	-0.188	153.853	-28.949	990.737	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	168.223	-21.546	1140.973	1			-0.188	180.068	-33.881	1047.185	1				
	510	Under	500	700	-0.128	174.697	-22.375	1417.225	1	3500	10D22	-0.188	163.037	-30.677	1229.717	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	161.602	-20.698	1473.673	1			-0.188	171.913	-32.347	1286.165	1				
	514	Under	500	700	-0.128	161.155	-20.640	1620.377	1	3500	10D22	-0.188	149.231	-28.079	1103.772	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	145.155	-18.591	1676.825	1			-0.188	155.723	-29.301	1160.220	1				
	524	Under	500	700	-0.128	154.299	-19.762	1494.614	1	3500	10D22	-0.188	142.012	-26.721	1331.120	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	139.551	-17.874	1551.062	1			-0.188	150.585	-28.334	1387.568	1				
	534	Under	500	700	-0.128	154.829	-19.830	1703.226	1	3500	10D22	-0.188	142.275	-26.770	1168.994	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	139.909	-17.919	1759.674	1			-0.188	151.215	-28.453	1225.442	1				
	544	Under	500	700	-0.128	162.223	-20.777	1460.613	1	3500	10D22	-0.188	149.388	-28.109	1284.938	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	147.093	-18.839	1517.061	1			-0.188	158.811	-29.882	1341.386	1				
	554	Under	500	700	-0.128	159.803	-20.467	1614.857	1	3500	10D22	-0.188	146.927	-27.646	1079.114	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	144.148	-18.462	1671.305	1			-0.188	155.935	-29.341	1135.562	1				
	558	Under	500	700	-0.128	120.441	-15.426	1112.181	1	3500	10D22	-0.188	107.593	-20.245	669.880	1	3500	10D22	7000	20D22
		Above	500	700	-0.128	106.645	-13.659	1168.629	1			-0.188	118.494	-22.296	726.328	1				

3rd floor	691	Under	500	700	-0.126	151.239	-19.121	855.432	1	3500	10D22	-0.268	141.687	-38.041	750.528	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	129.817	-16.413	911.880	1			-0.268	137.659	-36.960	806.976	1				
	695	Under	500	700	-0.126	170.578	-21.566	1088.348	1	3500	10D22	-0.268	160.649	-43.132	969.774	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	151.570	-19.163	1144.796	1			-0.268	160.005	-42.959	1026.222	1				
	699	Under	500	700	-0.126	156.983	-19.847	1198.255	1	3500	10D22	-0.268	146.657	-39.375	919.703	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	139.193	-17.598	1254.703	1			-0.268	147.987	-39.733	976.151	1				
	709	Under	500	700	-0.126	148.163	-18.732	1154.069	1	3500	10D22	-0.268	137.469	-36.909	1063.916	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	130.979	-16.560	1210.517	1			-0.268	140.160	-37.631	1120.364	1				
	719	Under	500	700	-0.126	149.312	-18.877	1268.190	1	3500	10D22	-0.268	138.281	-37.127	974.372	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	131.742	-16.656	1324.638	1			-0.268	141.249	-37.924	1030.820	1				
	729	Under	500	700	-0.126	158.438	-20.031	1127.521	1	3500	10D22	-0.268	147.165	-39.512	1026.373	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	140.316	-17.740	1183.969	1			-0.268	150.097	-40.299	1082.821	1				
	739	Under	500	700	-0.126	158.586	-20.050	1218.018	1	3500	10D22	-0.268	147.236	-39.531	929.141	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	139.545	-17.643	1274.466	1			-0.268	149.400	-40.112	985.589	1				
	743	Under	500	700	-0.126	117.807	-14.894	871.621	1	3500	10D22	-0.268	106.434	-28.576	584.820	1	3500	10D22	7000	20D22
		Above	500	700	-0.126	99.350	-12.561	928.069	1			-0.268	109.227	-29.326	641.268	1				
4th floor	876	Under	500	700	24.497	143.983	3527.142	623.124	1	3500	10D22	9.509	136.243	1295.471	523.856	1	3500	10D22	7000	20D22
		Above	500	700	24.497	122.780	3007.730	679.572	1			9.509	128.553	1222.352	580.304	1				
	880	Under	500	700	24.497	162.179	3972.879	770.491	1	3500	10D22	9.509	154.176	1465.990	709.000	1	3500	10D22	7000	20D22
		Above	500	700	24.497	140.475	3441.189	826.939	1			9.509	146.452	1392.540	765.448	1				
	884	Under	500	700	24.497	146.866	3597.766	810.060	1	3500	10D22	9.509	138.342	1315.426	712.520	1	3500	10D22	7000	20D22
		Above	500	700	24.497	125.092	3064.370	866.508	1			9.509	131.535	1250.701	768.968	1				
	894	Under	500	700	24.497	136.480	3343.326	821.142	1	3500	10D22	9.509	127.584	1213.137	787.470	1	3500	10D22	7000	20D22
		Above	500	700	24.497	115.230	2822.764	877.590	1			9.509	122.014	1160.172	843.918	1				
	904	Under	500	700	24.497	138.226	3386.113	863.154	1	3500	10D22	9.509	128.931	1225.942	754.087	1	3500	10D22	7000	20D22
		Above	500	700	24.497	116.531	2854.655	919.602	1			9.509	123.678	1175.995	810.535	1				
	914	Under	500	700	24.497	148.681	3642.211	804.706	1	3500	10D22	9.509	139.175	1323.350	761.099	1	3500	10D22	7000	20D22
		Above	500	700	24.497	126.700	3103.760	861.154	1			9.509	134.041	1274.531	817.547	1				
	924	Under	500	700	24.497	149.466	3661.444	857.319	1	3500	10D22	9.509	139.843	1329.705	760.223	1	3500	10D22	7000	20D22
		Above	500	700	24.497	127.658	3127.209	913.767	1			9.509	135.087	1284.484	816.671	1				
	928	Under	500	700	24.497	108.332	2653.785	648.405	1	3500	10D22	9.509	98.616	937.691	490.523	1	3500	10D22	7000	20D22
		Above	500	700	24.497	86.884	2128.396	704.853	1			9.509	94.351	897.139	546.971	1				

5th floor	1061	Under	500	700	1.251	121.423	151.926	387.392	1	3500	10D22	0.034	116.513	3.962	308.352	1	3500	10D22	7000	20D22
		Above	500	700	1.251	102.392	128.115	443.840	1			0.034	105.100	3.574	364.800	1				
	1065	Under	500	700	1.251	139.390	174.407	464.525	1	3500	10D22	0.034	134.296	4.567	443.929	1	3500	10D22	7000	20D22
		Above	500	700	1.251	120.917	151.294	520.973	1			0.034	123.716	4.207	500.377	1				
	1069	Under	500	700	1.251	123.951	155.090	483.032	1	3500	10D22	0.034	118.309	4.023	445.136	1	3500	10D22	7000	20D22
		Above	500	700	1.251	105.037	131.425	539.480	1			0.034	108.327	3.684	501.584	1				
	1079	Under	500	700	1.251	113.673	142.230	504.854	1	3500	10D22	0.034	107.734	3.664	495.000	1	3500	10D22	7000	20D22
		Above	500	700	1.251	94.499	118.240	561.302	1			0.034	97.977	3.332	551.448	1				
	1089	Under	500	700	1.251	115.625	144.673	511.030	1	3500	10D22	0.034	109.306	3.717	479.042	1	3500	10D22	7000	20D22
		Above	500	700	1.251	96.208	120.377	567.478	1			0.034	100.024	3.401	535.490	1				
	1099	Under	500	700	1.251	126.757	158.601	492.309	1	3500	10D22	0.034	120.315	4.091	485.102	1	3500	10D22	7000	20D22
		Above	500	700	1.251	107.393	134.372	548.757	1			0.034	111.224	3.782	541.550	1				
	1109	Under	500	700	1.251	136.130	170.329	573.042	1	3500	10D22	0.034	129.531	4.405	524.328	1	3500	10D22	7000	20D22
		Above	500	700	1.251	112.138	140.309	629.490	1			0.034	116.047	3.946	580.776	1				
	1113	Under	500	700	1.251	95.003	118.870	446.812	1	3500	10D22	0.034	88.315	3.003	382.137	1	3500	10D22	7000	20D22
		Above	500	700	1.251	71.255	89.155	503.260	1			0.034	75.119	2.555	438.585	1				
6th floor	1246	Under	500	700	-0.062	123.805	-7.667	148.228	1	3500	10D22	-0.029	121.906	-3.502	105.342	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	90.862	-5.627	204.676	1			-0.029	91.191	-2.620	161.790	1				
	1250	Under	500	700	-0.062	145.477	-9.009	176.183	1	3500	10D22	-0.029	143.711	-4.128	171.526	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	113.294	-7.016	232.631	1			-0.029	113.294	-3.255	227.974	1				
	1254	Under	500	700	-0.062	125.936	-7.799	199.636	1	3500	10D22	-0.029	123.459	-3.547	155.262	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	92.728	-5.742	256.084	1			-0.029	93.431	-2.684	211.710	1				
	1264	Under	500	700	-0.062	108.477	-6.718	200.508	1	3500	10D22	-0.029	106.037	-3.046	186.611	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	79.356	-4.914	256.956	1			-0.029	80.002	-2.298	243.059	1				
	1274	Under	500	700	-0.062	112.570	-6.971	210.804	1	3500	10D22	-0.029	109.578	-3.148	167.751	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	81.954	-5.075	267.252	1			-0.029	82.971	-2.384	224.199	1				
	1284	Under	500	700	-0.062	127.289	-7.883	200.405	1	3500	10D22	-0.029	124.632	-3.580	193.069	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	95.166	-5.893	256.853	1			-0.029	95.894	-2.755	249.517	1				
	1294	Under	500	700	-0.062	94.408	-5.846	334.051	1	3500	10D22	-0.029	91.826	-2.638	266.592	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	87.094	-5.393	390.499	1			-0.029	87.800	-2.522	323.040	1				
	1298	Under	500	700	-0.062	56.290	-3.486	270.301	1	3500	10D22	-0.029	53.797	-1.545	254.530	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	47.609	-2.948	326.749	1			-0.029	48.134	-1.383	310.978	1				
	1308	Under	500	700	-0.062	96.061	-5.949	131.929	1	3500	10D22	-0.029	94.898	-2.726	127.374	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	59.359	-3.676	188.377	1			-0.029	59.617	-1.713	183.822	1				
	1316	Under	500	700	-0.062	114.183	-7.071	129.603	1	3500	10D22	-0.029	113.022	-3.247	89.091	1	3500	10D22	7000	20D22
		Above	500	700	-0.062	87.162	-5.398	186.051	1			-0.029	87.449	-2.512	145.539	1				

Attachment VIII.8. Calculation of the shear force necessary combination of the AS-E column due to load combination

Floor	Column No	Column Position	Shear Force Column (kNm)				Load Combination (kNm)									
			V_D	V_L	V_{Ex}	V_{Ey}	$1,4V_D$	$1,2V_D+1,6V_L$	$1,2V_D+V_L+2V_E$		$1,2V_D+V_L-2V_E$		$0,9V_D+2V_E$		$0,9V_D-2V_E$	
									$(V_{Ex}+0,3V_{Ey})$	$(0,3V_{Ex}+V_{Ey})$	$(V_{Ex}+0,3V_{Ey})$	$(0,3V_{Ex}+V_{Ey})$	$(V_{Ex}+0,3V_{Ey})$	$(0,3V_{Ex}+V_{Ey})$	$(V_{Ex}+0,3V_{Ey})$	$(0,3V_{Ex}+V_{Ey})$
Basement floor	136	Under	3.361	1.315	33.159	-28.310	4.705	6.137	54.680	-31.376	-43.984	42.073	52.357	-33.700	-46.307	39.750
		Above	3.361	1.315	33.159	-28.310	4.705	6.137	54.680	-31.376	-43.984	42.073	52.357	-33.700	-46.307	39.750
	140	Under	4.704	1.377	73.488	-62.642	6.586	7.848	116.413	-74.169	-102.369	88.213	113.624	-76.958	-105.157	85.425
		Above	4.704	1.377	73.488	-62.642	6.586	7.848	116.413	-74.169	-102.369	88.213	113.624	-76.958	-105.157	85.425
	144	Under	11.411	5.215	72.665	-62.047	15.975	22.037	127.010	-61.587	-89.194	99.403	118.372	-70.225	-97.832	90.765
		Above	11.411	5.215	72.665	-62.047	15.975	22.037	127.010	-61.587	-89.194	99.403	118.372	-70.225	-97.832	90.765
	154	Under	10.798	4.997	71.427	-61.255	15.117	20.953	124.056	-61.699	-88.146	97.608	115.819	-69.936	-96.383	89.372
		Above	10.798	4.997	71.427	-61.255	15.117	20.953	124.056	-61.699	-88.146	97.608	115.819	-69.936	-96.383	89.372
	164	Under	10.806	4.995	70.371	-60.499	15.128	20.959	122.405	-60.813	-86.480	96.738	114.168	-69.050	-94.717	88.501
		Above	10.806	4.995	70.371	-60.499	15.128	20.959	122.405	-60.813	-86.480	96.738	114.168	-69.050	-94.717	88.501
	174	Under	11.179	5.289	68.871	-59.503	15.651	21.877	120.744	-58.980	-83.336	96.387	112.101	-67.622	-91.979	87.745
		Above	11.179	5.289	68.871	-59.503	15.651	21.877	120.744	-58.980	-83.336	96.387	112.101	-67.622	-91.979	87.745
	184	Under	9.866	4.358	67.820	-58.744	13.812	18.812	116.591	-60.599	-84.196	92.993	109.273	-67.917	-91.514	85.675
		Above	9.866	4.358	67.820	-58.744	13.812	18.812	116.591	-60.599	-84.196	92.993	109.273	-67.917	-91.514	85.675
	188	Under	4.848	1.036	65.158	-56.749	6.787	7.475	103.120	-67.550	-89.413	81.257	100.630	-70.040	-91.903	78.766
		Above	4.848	1.036	65.158	-56.749	6.787	7.475	103.120	-67.550	-89.413	81.257	100.630	-70.040	-91.903	78.766
1st floor	321	Under	3.361	1.315	32.182	-28.166	4.705	6.137	52.813	-31.675	-42.116	42.371	50.489	-33.998	-44.440	40.048
		Above	3.361	1.315	32.182	-28.166	4.705	6.137	52.813	-31.675	-42.116	42.371	50.489	-33.998	-44.440	40.048
	325	Under	17.054	6.961	75.979	-68.124	23.876	31.602	138.509	-63.235	-83.658	118.086	126.432	-75.312	-95.735	106.009
		Above	17.054	6.961	75.979	-68.124	23.876	31.602	138.509	-63.235	-83.658	118.086	126.432	-75.312	-95.735	106.009
	329	Under	20.796	9.650	74.966	-67.439	29.114	40.395	144.074	-55.293	-74.863	124.504	128.185	-71.182	-90.752	108.615
		Above	20.796	9.650	74.966	-67.439	29.114	40.395	144.074	-55.293	-74.863	124.504	128.185	-71.182	-90.752	108.615
	339	Under	19.408	9.047	73.841	-66.556	27.171	37.765	140.085	-56.471	-75.412	121.144	125.216	-71.340	-90.281	106.275
		Above	19.408	9.047	73.841	-66.556	27.171	37.765	140.085	-56.471	-75.412	121.144	125.216	-71.340	-90.281	106.275
	349	Under	19.409	9.040	72.768	-65.789	27.173	37.755	138.393	-55.586	-73.732	120.248	123.531	-70.449	-88.595	105.385
		Above	19.409	9.040	72.768	-65.789	27.173	37.755	138.393	-55.586	-73.732	120.248	123.531	-70.449	-88.595	105.385
	359	Under	20.686	9.877	71.313	-64.520	28.960	40.626	138.614	-51.552	-69.214	120.952	122.531	-67.635	-85.297	104.870
		Above	20.686	9.877	71.313	-64.520	28.960	40.626	138.614	-51.552	-69.214	120.952	122.531	-67.635	-85.297	104.870
	369	Under	19.267	8.512	69.731	-63.073	26.974	36.740	133.251	-52.675	-69.986	115.940	118.959	-66.967	-84.278	101.648
		Above	19.267	8.512	69.731	-63.073	26.974	36.740	133.251	-52.675	-69.986	115.940	118.959	-66.967	-84.278	101.648
	373	Under	9.673	2.104	66.158	-59.939	13.542	14.974	110.064	-66.472	-82.641	93.895	105.058	-71.478	-87.647	88.889
		Above	9.673	2.104	66.158	-59.939	13.542	14.974	110.064	-66.472	-82.641	93.895	105.058	-71.478	-87.647	88.889
2nd floor	506	Under	21.771	8.483	72.144	-67.554	30.479	39.698	138.364	-57.213	-69.147	126.430	123.350	-72.228	-84.162	111.416
		Above	21.771	8.483	72.144	-67.554	30.479	39.698	138.364	-57.213	-69.147	126.430	123.350	-72.228	-84.162	111.416
	510	Under	24.489	10.916	64.403	-60.178	34.285	46.852	133.002	-41.411	-52.396	122.017	114.739	-59.674	-70.659	103.754
		Above	24.489	10.916	64.403	-60.178	34.285	46.852	133.002	-41.411	-52.396	122.017	114.739	-59.674	-70.659	103.754
	514	Under	19.511	9.221	64.697	-60.371	27.315	38.167	125.806	-49.290	-60.537	114.558	110.731	-64.364	-75.612	99.484
		Above	19.511	9.221	64.697	-60.371	27.315	38.167	125.806	-49.290	-60.537	114.558	110.731	-64.364	-75.612	99.484
	524	Under	17.572	8.288	65.001	-60.516	24.601	34.347	123.067	-52.657	-64.318	111.406	109.507	-66.217	-77.878	97.846
		Above	17.572	8.288	65.001	-60.516	24.601	34.347	123.067	-52.657	-64.318	111.406	109.507	-66.217	-77.878	97.846
	534	Under	17.565	8.281	65.394	-60.805	24.591	34.328	123.664	-53.015	-64.946	111.733	110.114	-66.565	-78.497	98.182
		Above	17.565	8.281	65.394	-60.805	24.591	34.328	123.664	-53.015	-64.946	111.733	110.114	-66.565	-78.497	98.182
	544	Under	19.702	9.524	65.252	-60.530	27.583	38.881	127.352	-48.742	-61.020	115.075	111.918	-64.177	-76.454	99.641
		Above	19.702	9.524	65.252	-60.530	27.583	38.881	127.352	-48.742	-61.020	115.075	111.918	-64.177	-76.454	99.641
	554	Under	19.877	8.764	64.136	-59.393	27.828	37.875	125.253	-47.688	-60.020	112.921	110.526	-62.415	-74.747	98.194
		Above	19.877	8.764	64.136	-59.393	27.828	37.875	125.253	-47.688	-60.020	112.921	110.526	-62.415	-74.747	98.194
	558	Under	10.334	2.304	62.291	-57.542	14.468	16.087	104.762	-63.005	-75.352	92.414	99.357	-68.409	-80.756	87.010
		Above	10.334	2.304	62.291	-57.542	14.468	16.087	104.762	-63.005	-75.352	92.414	99.357	-68.409	-80.756	87.010

3rd floor	691	Under	19.770	7.660	56.910	-53.565	27.678	35.980	113.065	-41.600	-50.297	104.368	99.474	-55.191	-63.888	90.777
		Above	19.770	7.660	56.910	-53.565	27.678	35.980	113.065	-41.600	-50.297	104.368	99.474	-55.191	-63.888	90.777
	695	Under	25.128	11.068	57.663	-54.132	35.179	47.862	124.068	-32.445	-41.625	114.888	105.462	-51.051	-60.232	96.281
		Above	25.128	11.068	57.663	-54.132	35.179	47.862	124.068	-32.445	-41.625	114.888	105.462	-51.051	-60.232	96.281
	699	Under	20.355	9.681	58.619	-54.942	28.497	39.916	118.380	-40.606	-50.166	108.820	102.592	-56.393	-65.953	93.032
		Above	20.355	9.681	58.619	-54.942	28.497	39.916	118.380	-40.606	-50.166	108.820	102.592	-56.393	-65.953	93.032
	709	Under	17.744	8.457	58.835	-55.012	24.842	34.824	114.413	-44.973	-54.913	104.473	100.632	-58.753	-68.693	90.693
		Above	17.744	8.457	58.835	-55.012	24.842	34.824	114.413	-44.973	-54.913	104.473	100.632	-58.753	-68.693	90.693
	719	Under	17.742	8.452	59.590	-55.640	24.839	34.814	115.538	-45.784	-56.054	105.268	101.764	-59.558	-69.828	91.494
		Above	17.742	8.452	59.590	-55.640	24.839	34.814	115.538	-45.784	-56.054	105.268	101.764	-59.558	-69.828	91.494
	729	Under	20.504	9.977	59.054	-55.005	28.706	40.568	119.687	-39.996	-50.523	109.159	103.559	-56.124	-66.651	93.031
		Above	20.504	9.977	59.054	-55.005	28.706	40.568	119.687	-39.996	-50.523	109.159	103.559	-56.124	-66.651	93.031
	739	Under	21.515	9.446	57.871	-53.793	30.121	40.932	118.730	-37.599	-48.202	108.127	102.830	-53.500	-64.103	92.227
		Above	21.515	9.446	57.871	-53.793	30.121	40.932	118.730	-37.599	-48.202	108.127	102.830	-53.500	-64.103	92.227
	743	Under	11.456	2.579	56.009	-51.923	16.038	17.874	97.190	-53.914	-64.538	86.567	91.175	-59.930	-70.554	80.551
		Above	11.456	2.579	56.009	-51.923	16.038	17.874	97.190	-53.914	-64.538	86.567	91.175	-59.930	-70.554	80.551
4th floor	876	Under	21.704	8.275	47.193	-44.594	30.386	39.285	101.949	-26.552	-33.310	95.192	87.163	-41.339	-48.096	80.406
		Above	21.704	8.275	47.193	-44.594	30.386	39.285	101.949	-26.552	-33.310	95.192	87.163	-41.339	-48.096	80.406
	880	Under	26.736	11.604	46.662	-43.973	37.430	50.650	110.627	-16.262	-23.253	103.636	91.003	-35.886	-42.878	84.011
		Above	26.736	11.604	46.662	-43.973	37.430	50.650	110.627	-16.262	-23.253	103.636	91.003	-35.886	-42.878	84.011
	884	Under	20.970	9.833	48.200	-45.322	29.358	40.897	104.204	-26.727	-34.210	96.721	88.080	-42.851	-50.334	80.597
		Above	20.970	9.833	48.200	-45.322	29.358	40.897	104.204	-26.727	-34.210	96.721	88.080	-42.851	-50.334	80.597
	894	Under	17.854	8.374	48.458	-45.443	24.996	34.823	99.449	-32.012	-39.851	91.610	85.719	-45.743	-53.582	77.880
		Above	17.854	8.374	48.458	-45.443	24.996	34.823	99.449	-32.012	-39.851	91.610	85.719	-45.743	-53.582	77.880
	904	Under	17.848	8.369	49.629	-46.467	24.987	34.808	101.164	-33.370	-41.591	92.943	87.441	-47.093	-55.315	79.220
		Above	17.848	8.369	49.629	-46.467	24.987	34.808	101.164	-33.370	-41.591	92.943	87.441	-47.093	-55.315	79.220
	914	Under	21.121	10.119	48.920	-45.680	29.569	41.536	105.896	-26.544	-34.968	97.472	89.441	-42.999	-51.423	81.017
		Above	21.121	10.119	48.920	-45.680	29.569	41.536	105.896	-26.544	-34.968	97.472	89.441	-42.999	-51.423	81.017
	924	Under	22.498	9.718	47.770	-44.491	31.497	42.546	105.561	-23.604	-32.130	97.036	89.094	-40.072	-48.597	80.568
		Above	22.498	9.718	47.770	-44.491	31.497	42.546	105.561	-23.604	-32.130	97.036	89.094	-40.072	-48.597	80.568
	928	Under	12.175	2.723	46.210	-42.905	17.045	18.967	84.010	-40.751	-49.344	75.417	77.635	-47.127	-55.720	69.042
		Above	12.175	2.723	46.210	-42.905	17.045	18.967	84.010	-40.751	-49.344	75.417	77.635	-47.127	-55.720	69.042

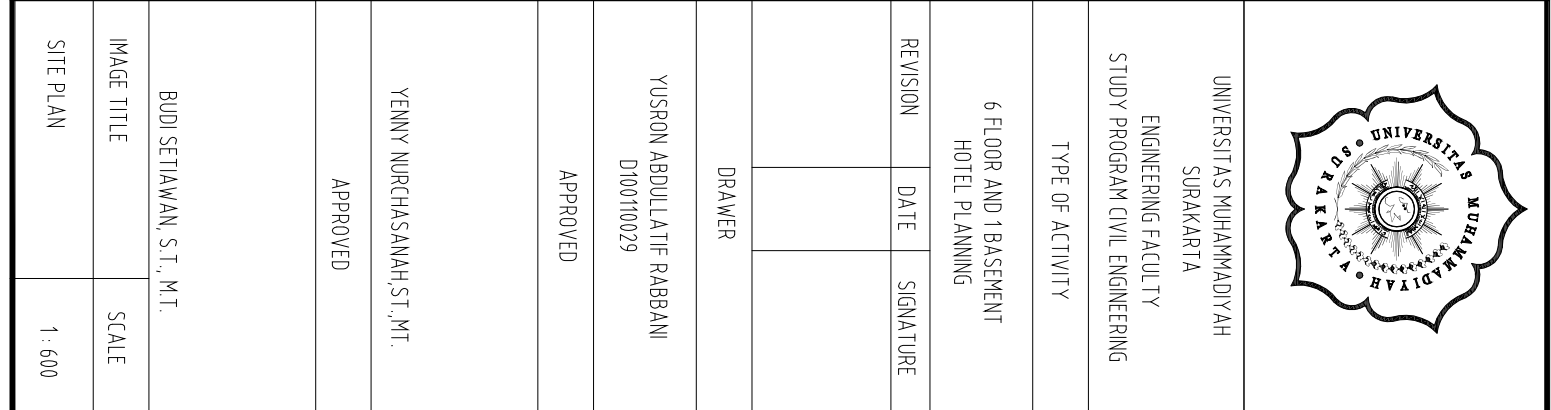
5th floor	1061	Under	21.172	8.463	31.889	-30.424	29.641	38.947	79.393	-7.845	-11.654	75.584	64.578	-22.660	-26.469	60.769
		Above	21.172	8.463	31.889	-30.424	29.641	38.947	79.393	-7.845	-11.654	75.584	64.578	-22.660	-26.469	60.769
	1065	Under	26.080	11.909	31.595	-30.077	36.512	50.350	88.349	2.008	-1.939	84.402	68.616	-17.725	-21.672	64.669
		Above	26.080	11.909	31.595	-30.077	36.512	50.350	88.349	2.008	-1.939	84.402	68.616	-17.725	-21.672	64.669
	1069	Under	19.906	10.152	33.593	-31.875	27.868	40.130	82.100	-9.555	-14.022	77.633	65.976	-25.679	-30.146	61.510
		Above	19.906	10.152	33.593	-31.875	27.868	40.130	82.100	-9.555	-14.022	77.633	65.976	-25.679	-30.146	61.510
	1079	Under	16.573	8.683	33.998	-32.187	23.202	33.780	77.254	-15.405	-20.113	72.546	63.600	-29.060	-33.768	58.891
		Above	16.573	8.683	33.998	-32.187	23.202	33.780	77.254	-15.405	-20.113	72.546	63.600	-29.060	-33.768	58.891
	1089	Under	16.572	8.678	35.376	-33.427	23.201	33.771	79.260	-17.064	-22.131	74.193	65.611	-30.714	-35.781	60.543
		Above	16.572	8.678	35.376	-33.427	23.201	33.771	79.260	-17.064	-22.131	74.193	65.611	-30.714	-35.781	60.543
	1099	Under	20.123	10.462	34.704	-32.729	28.172	40.887	84.380	-10.026	-15.161	79.245	67.881	-26.525	-31.660	62.746
		Above	20.123	10.462	34.704	-32.729	28.172	40.887	84.380	-10.026	-15.161	79.245	67.881	-26.525	-31.660	62.746
	1109	Under	23.493	10.355	34.129	-32.108	32.890	44.760	87.540	-5.192	-10.447	82.285	70.137	-22.595	-27.850	64.882
		Above	23.493	10.355	34.129	-32.108	32.890	44.760	87.540	-5.192	-10.447	82.285	70.137	-22.595	-27.850	64.882
	1113	Under	13.167	3.021	33.000	-30.970	18.434	20.634	66.239	-23.319	-28.597	60.961	59.268	-30.290	-35.568	53.990
		Above	13.167	3.021	33.000	-30.970	18.434	20.634	66.239	-23.319	-28.597	60.961	59.268	-30.290	-35.568	53.990
6th floor	1246	Under	28.763	8.648	14.938	-14.509	40.268	48.352	64.334	23.108	21.993	63.219	47.057	5.832	4.716	45.942
		Above	28.763	8.648	14.938	-14.509	40.268	48.352	64.334	23.108	21.993	63.219	47.057	5.832	4.716	45.942
	1250	Under	35.150	11.817	14.206	-13.836	49.210	61.087	74.107	34.849	33.887	73.145	51.745	12.487	11.525	50.783
		Above	35.150	11.817	14.206	-13.836	49.210	61.087	74.107	34.849	33.887	73.145	51.745	12.487	11.525	50.783
	1254	Under	27.647	9.288	17.419	-16.808	38.706	48.037	67.218	19.300	17.711	65.629	49.636	1.718	0.129	48.047
		Above	27.647	9.288	17.419	-16.808	38.706	48.037	67.218	19.300	17.711	65.629	49.636	1.718	0.129	48.047
	1264	Under	23.048	7.073	17.444	-16.851	32.267	38.974	59.508	11.495	9.953	57.966	45.521	-2.492	-4.034	43.979
		Above	23.048	7.073	17.444	-16.851	32.267	38.974	59.508	11.495	9.953	57.966	45.521	-2.492	-4.034	43.979
	1274	Under	23.032	7.073	19.918	-19.147	32.245	38.955	63.059	8.368	6.364	61.055	49.077	-5.614	-7.619	47.072
		Above	23.032	7.073	19.918	-19.147	32.245	38.955	63.059	8.368	6.364	61.055	49.077	-5.614	-7.619	47.072
	1284	Under	27.777	9.472	18.280	-17.629	38.888	48.488	68.787	18.514	16.822	67.094	50.982	0.709	-0.983	49.289
		Above	27.777	9.472	18.280	-17.629	38.888	48.488	68.787	18.514	16.822	67.094	50.982	0.709	-0.983	49.289
	1294	Under	22.562	7.828	14.943	-14.310	31.587	39.599	56.202	15.248	13.602	54.557	41.606	0.652	-0.994	39.960
		Above	22.562	7.828	14.943	-14.310	31.587	39.599	56.202	15.248	13.602	54.557	41.606	0.652	-0.994	39.960
	1298	Under	11.635	2.125	14.064	-13.484	16.289	17.362	36.125	-2.443	-3.951	34.617	30.509	-8.058	-9.566	29.001
		Above	11.635	2.125	14.064	-13.484	16.289	17.362	36.125	-2.443	-3.951	34.617	30.509	-8.058	-9.566	29.001
	1308	Under	22.214	4.415	11.094	-10.821	31.100	33.721	46.767	16.086	15.376	46.057	35.688	5.007	4.297	34.978
		Above	22.214	4.415	11.094	-10.821	31.100	33.721	46.767	16.086	15.376	46.057	35.688	5.007	4.297	34.978
	1316	Under	28.846	7.583	11.609	-11.330	40.384	46.748	58.618	26.504	25.778	57.893	42.381	10.267	9.541	41.656
		Above	28.846	7.583	11.609	-11.330	40.384	46.748	58.618	26.504	25.778	57.893	42.381	10.267	9.541	41.656

Attachment VIII.9. Calculation of shear reinforcement columns as-E

Floor	Column No	Column Position	Column Dimension		P _{u,k} (kN)	V _{u,k} (kNm)	reinforcement shear area		Begel installed	
			b	h			plastic hinge	out plastic hinge	plastic hinge	out plastic hinge
			(mm)	(mm)			(mm ²)	(mm ²)		
Basement floor	136	Under	500	700	1376.471	54.680	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	1432.919	54.680				
	140	Under	500	700	1970.322	116.413	713.180	713.180	-	2dp10-220
		Above	500	700	2026.770	116.413				
	144	Under	500	700	2545.655	127.010	713.180	713.180	-	2dp10-240
		Above	500	700	2602.103	127.010				
	154	Under	500	700	2184.127	124.056	713.180	713.180	-	2dp10-240
		Above	500	700	2240.575	124.056				
	164	Under	500	700	2614.412	122.405	713.180	713.180	-	2dp10-240
		Above	500	700	2670.860	122.405				
	174	Under	500	700	2150.397	120.744	713.180	713.180	-	2dp10-240
		Above	500	700	2206.845	120.744				
	184	Under	500	700	2473.527	116.591	713.180	713.180	-	2dp10-240
		Above	500	700	2529.975	116.591				
	188	Under	500	700	1615.451	103.120	713.180	713.180	-	2dp10-220
		Above	500	700	1671.899	103.120				
1st floor	321	Under	500	700	1320.021	52.813	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	1376.469	52.813				
	325	Under	500	700	1763.449	138.509	713.180	713.180	-	2dp10-220
		Above	500	700	1819.897	138.509				
	329	Under	500	700	2063.773	144.074	713.180	713.180	-	2dp10-240
		Above	500	700	2120.221	144.074				
	339	Under	500	700	1840.550	140.085	713.180	713.180	-	2dp10-240
		Above	500	700	1896.998	140.085				
	349	Under	500	700	2161.244	138.393	713.180	713.180	-	2dp10-240
		Above	500	700	2217.692	138.393				
	359	Under	500	700	1803.384	138.614	713.180	713.180	-	2dp10-240
		Above	500	700	1859.832	138.614				
	369	Under	500	700	2041.662	133.251	713.180	713.180	-	2dp10-240
		Above	500	700	2098.110	133.251				
	373	Under	500	700	1364.742	110.064	713.180	713.180	-	2dp10-220
		Above	500	700	1421.190	110.064				
2nd floor	506	Under	500	700	1084.525	138.364	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	1140.973	138.364				
	510	Under	500	700	1417.225	133.002	713.180	713.180	-	2dp10-220
		Above	500	700	1473.673	133.002				
	514	Under	500	700	1620.377	125.806	713.180	713.180	-	2dp10-240
		Above	500	700	1676.825	125.806				
	524	Under	500	700	1494.614	123.067	713.180	713.180	-	2dp10-240
		Above	500	700	1551.062	123.067				
	534	Under	500	700	1703.226	123.664	713.180	713.180	-	2dp10-240
		Above	500	700	1759.674	123.664				
	544	Under	500	700	1460.613	127.352	713.180	713.180	-	2dp10-240
		Above	500	700	1517.061	127.352				
	554	Under	500	700	1614.857	125.253	713.180	713.180	-	2dp10-240
		Above	500	700	1671.305	125.253				
	558	Under	500	700	1112.181	104.762	713.180	713.180	-	2dp10-220
		Above	500	700	1168.629	104.762				

3rd floor	691	Under	500	700	855.432	113.065	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	911.880	113.065				
	695	Under	500	700	1088.348	124.068	713.180	713.180	-	2dp10-220
		Above	500	700	1144.796	124.068				
	699	Under	500	700	1198.255	118.380	713.180	713.180	-	2dp10-240
		Above	500	700	1254.703	118.380				
	709	Under	500	700	1154.069	114.413	713.180	713.180	-	2dp10-240
		Above	500	700	1210.517	114.413				
	719	Under	500	700	1268.190	115.538	713.180	713.180	-	2dp10-240
		Above	500	700	1324.638	115.538				
	729	Under	500	700	1127.521	119.687	713.180	713.180	-	2dp10-240
		Above	500	700	1183.969	119.687				
	739	Under	500	700	1218.018	118.730	713.180	713.180	-	2dp10-240
		Above	500	700	1274.466	118.730				
	743	Under	500	700	871.621	97.190	713.180	713.180	-	2dp10-220
		Above	500	700	928.069	97.190				
4th floor	876	Under	500	700	623.124	101.949	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	679.572	101.949				
	880	Under	500	700	770.491	110.627	713.180	713.180	-	2dp10-220
		Above	500	700	826.939	110.627				
	884	Under	500	700	810.060	104.204	713.180	713.180	-	2dp10-240
		Above	500	700	866.508	104.204				
	894	Under	500	700	821.142	99.449	713.180	713.180	-	2dp10-240
		Above	500	700	877.590	99.449				
	904	Under	500	700	863.154	101.164	713.180	713.180	-	2dp10-240
		Above	500	700	919.602	101.164				
	914	Under	500	700	804.706	105.896	713.180	713.180	-	2dp10-240
		Above	500	700	861.154	105.896				
	924	Under	500	700	857.319	105.561	713.180	713.180	-	2dp10-240
		Above	500	700	913.767	105.561				
	928	Under	500	700	648.405	84.010	713.180	713.180	-	2dp10-220
		Above	500	700	704.853	84.010				
5th floor	1061	Under	500	700	387.392	79.393	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	443.840	79.393				
	1065	Under	500	700	464.525	88.349	713.180	713.180	-	2dp10-220
		Above	500	700	520.973	88.349				
	1069	Under	500	700	483.032	82.100	713.180	713.180	-	2dp10-240
		Above	500	700	539.480	82.100				
	1079	Under	500	700	504.854	77.254	713.180	713.180	-	2dp10-240
		Above	500	700	561.302	77.254				
	1089	Under	500	700	511.030	79.260	713.180	713.180	-	2dp10-240
		Above	500	700	567.478	79.260				
	1099	Under	500	700	492.309	84.380	713.180	713.180	-	2dp10-240
		Above	500	700	548.757	84.380				
	1109	Under	500	700	573.042	87.540	713.180	713.180	-	2dp10-240
		Above	500	700	629.490	87.540				
	1113	Under	500	700	446.812	66.239	713.180	713.180	-	2dp10-220
		Above	500	700	503.260	66.239				

6th floor	1246	Under	500	700	148.228	64.334	713.180	713.180	2dp10-170	2dp10-220
		Above	500	700	204.676	64.334				
	1250	Under	500	700	176.183	74.107	713.180	713.180	-	2dp10-220
		Above	500	700	232.631	74.107				
	1254	Under	500	700	199.636	67.218	713.180	713.180	-	2dp10-240
		Above	500	700	256.084	67.218				
	1264	Under	500	700	200.508	59.508	713.180	713.180	-	2dp10-240
		Above	500	700	256.956	59.508				
	1274	Under	500	700	210.804	63.059	713.180	713.180	-	2dp10-240
		Above	500	700	267.252	63.059				
	1284	Under	500	700	200.405	68.787	713.180	713.180	-	2dp10-240
		Above	500	700	256.853	68.787				
	1294	Under	500	700	334.051	56.202	713.180	713.180	-	2dp10-240
		Above	500	700	390.499	56.202				
	1298	Under	500	700	270.301	36.125	713.180	713.180	-	2dp10-220
		Above	500	700	326.749	36.125				
	1308	Under	500	700	131.929	46.767	713.180	713.180	-	2dp10-220
		Above	500	700	188.377	46.767				
	1316	Under	500	700	129.603	58.618	713.180	713.180	-	2dp10-220
		Above	500	700	186.051	58.618				



UNIVERSITAS MUHAMMADIYAH SURAKARTA		
ENGINEERING FACULTY STUDY PROGRAM CIVIL ENGINEERING		
TYPE OF ACTIVITY		
6 FLOOR AND 1 BASEMENT HOTEL PLANNING		
REVISION	DATE	SIGNATURE
DRAWER		
YUSRON ABDULLATIF RABBANI D100110029		
APPROVED		
YENNY NURCHASANAH, S.T., M.T.		
APPROVED		
BUDI SETIAWAN, S.T., M.T.		
IMAGE TITLE	SCALE	
SITE PLAN	1 : 600	

TYPE OF ACTIVITY		
6 FLOOR AND 1 BASEMENT HOTEL PLANNING		
REVISION	DATE	SIGNATURE
DRAWER		
YUSRON ABDULLATIF RABBANI D100110029		
APPROVED		
YENNY NURCHASANAH, S.T., M.T.		
APPROVED		
BUDI SETIAWAN, S.T., M.T.		
IMAGE TITLE	SCALE	
SITE PLAN	1 : 600	

6 FLOOR AND 1 BASEMENT HOTEL PLANNING		
REVISION	DATE	SIGNATURE
DRAWER		
YUSRON ABDULLATIF RABBANI D100110029		
APPROVED		
YENNY NURCHASANAH, S.T., M.T.		
APPROVED		
BUDI SETIAWAN, S.T., M.T.		
IMAGE TITLE	SCALE	
SITE PLAN	1 : 600	

REVISION	DATE	SIGNATURE
DRAWER		
YUSRON ABDULLATIF RABBANI		
D100110029		
APPROVED		
BUDI SETIAWAN, S.T., M.T.		
YENNY NURCHASANAH, S.T., MT.		
APPROVED		
BUDI SETIAWAN, S.T., M.T.		
IMAGE TITLE	SCALE	
SITE PLAN	1 : 600	

DRAWER	
YUSRON ABDULLATIF RABBANI D100110029	
APPROVED	
YENNY NURCHASANAH,ST.,MT.	
APPROVED	
BUDI SETIAWAN, S.T., MT.	
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

APPROVED	
YENNY NURCHASANAH, S.T., MT.	
APPROVED	
BUDI SETIAWAN, S.T., M.T.	
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

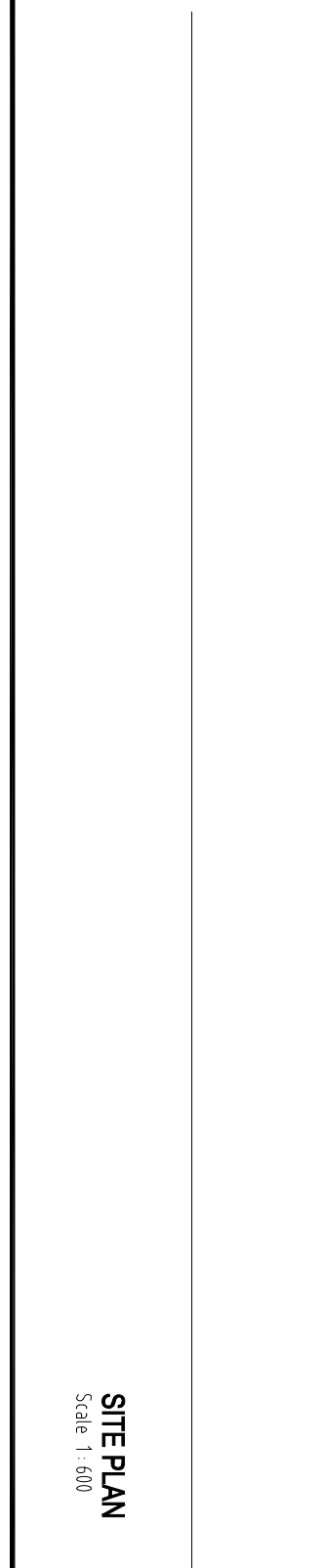
YENNY NURCHASANA,ST.,MT.	
APPROVED	
BUDI SETIAWAN, S.T., MT.	
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

APPROVED	
BUDI SETIAWAN, S.T., M.T.	
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

BUDI SETIAWAN, S.T., M.T.	
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

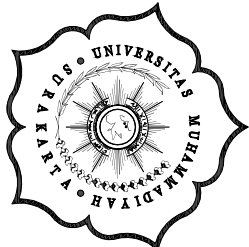
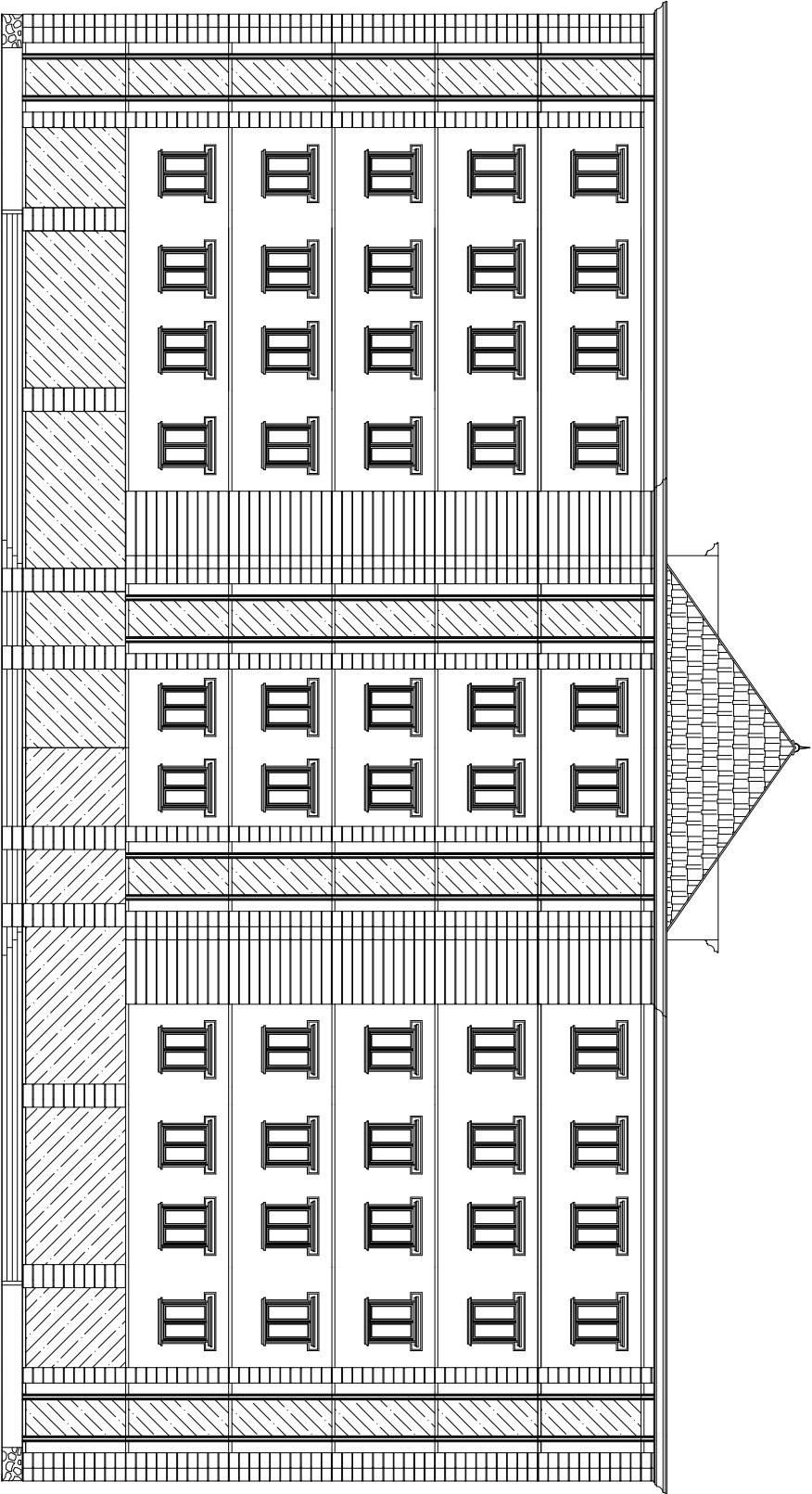
IMAGE TITLE	SCALE
SITE PLAN	1 : 600

SITE PLAN	1 : 600
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SITE PLAN
Scale 1 : 600

1881



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, S.T., M.T.

APPROVED

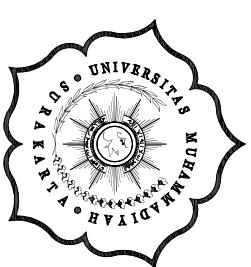
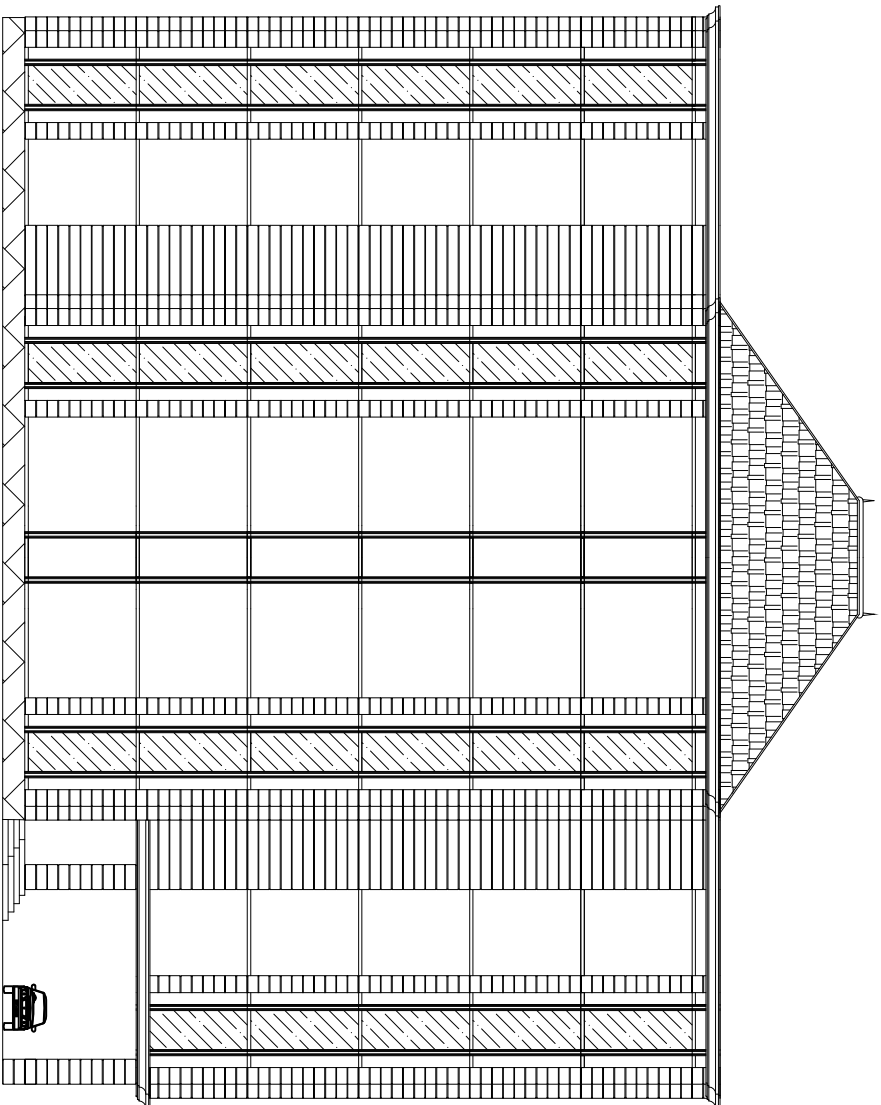
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRONT SIDE	1 : 300
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FRONT SIDE

Scale 1 : 300



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, S.T., M.T.

APPROVED

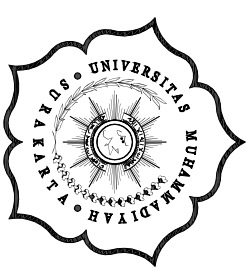
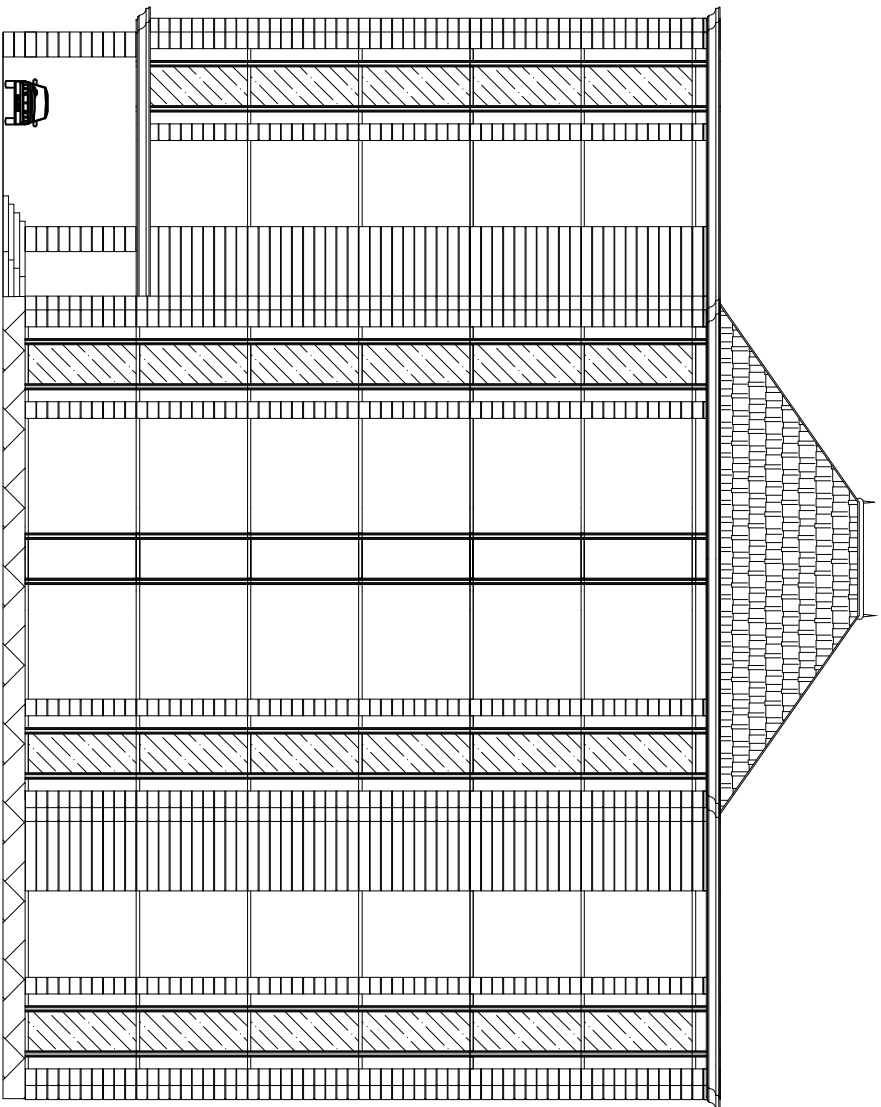
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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LEFT SIDE PLAN	1 : 300
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LEFT SIDE PLAN

Scale 1 : 300



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, S.T., M.T.

APPROVED

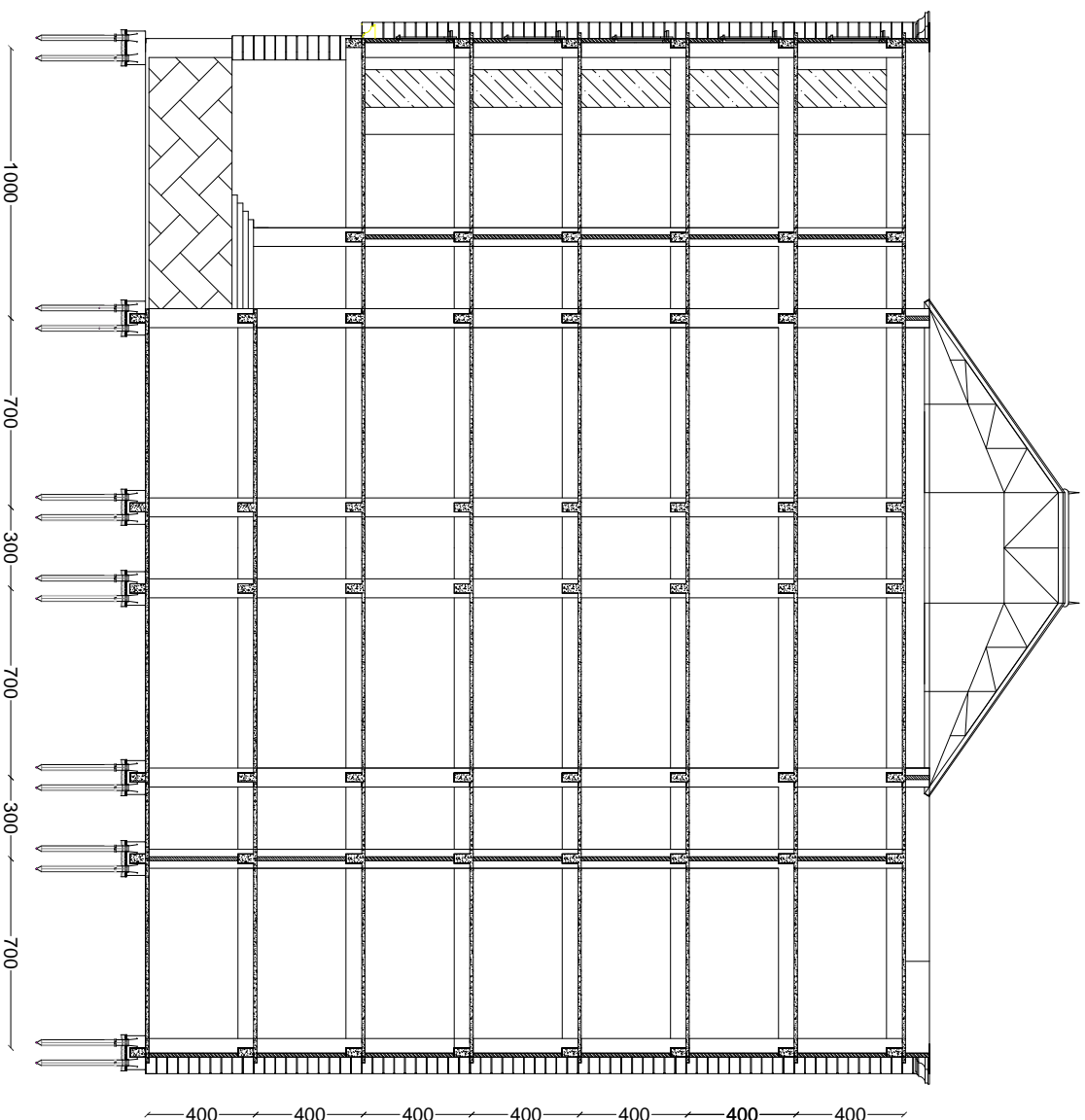
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IMAGE TITLE	SCALE
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RIGHT SIDE PLAN	1 : 300
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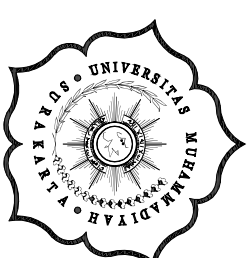
RIGHT SIDE PLAN

Scale 1 : 300



SLICE B-B

Scale 1 : 300



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE

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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

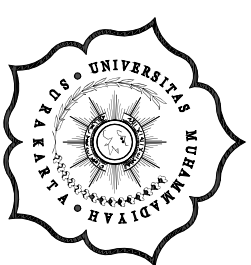
APPROVED

YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
SLICE B-B	1 : 300



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE

DRAWER

YUSRON ABDULATIF RABBANI
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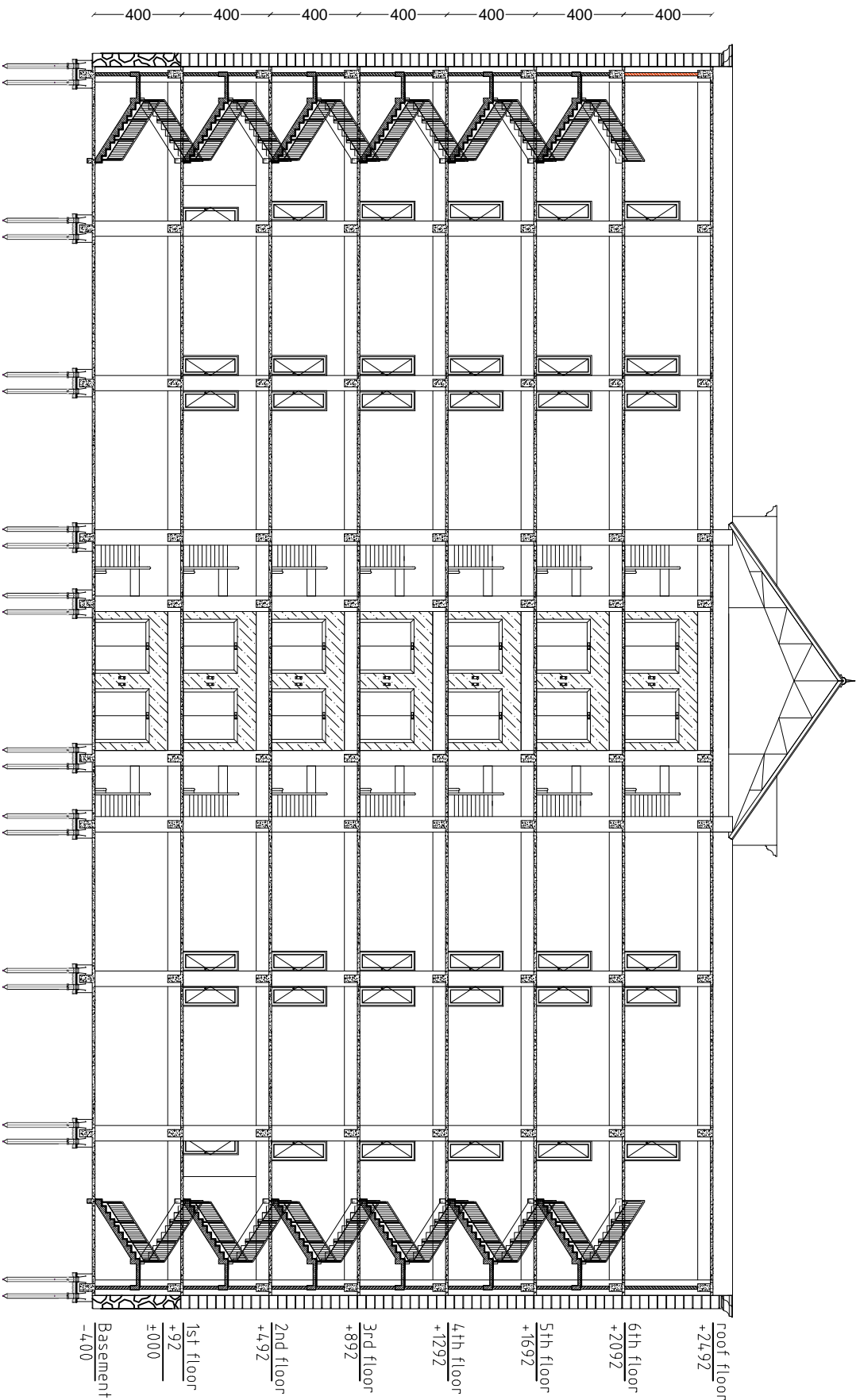
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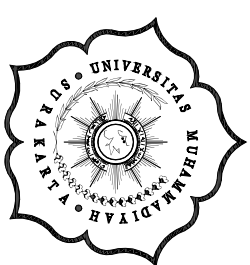
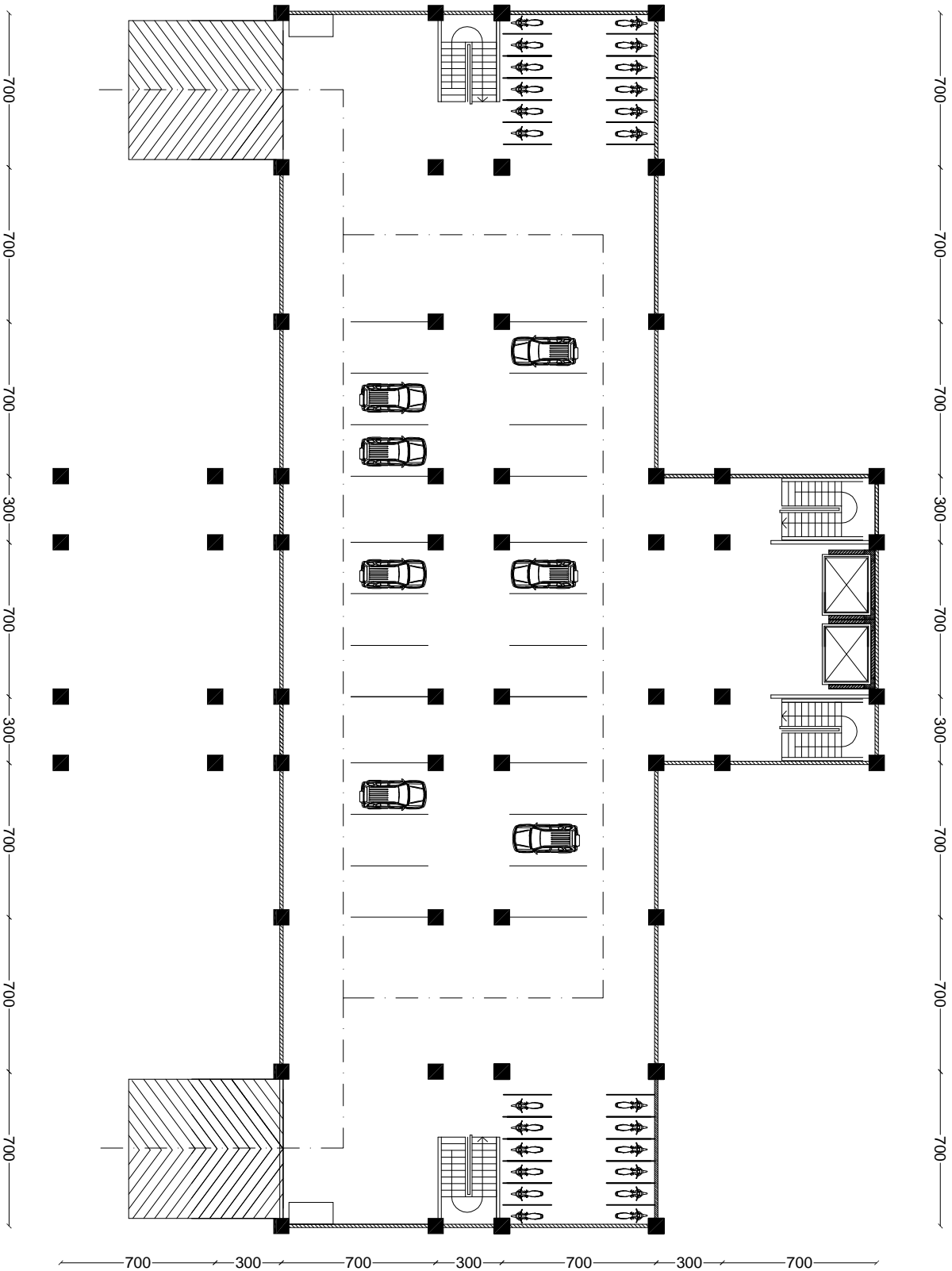
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
Slice A-A	1 : 300



SLICE AA

Scale 1 : 300



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE

DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, S.T., M.T.

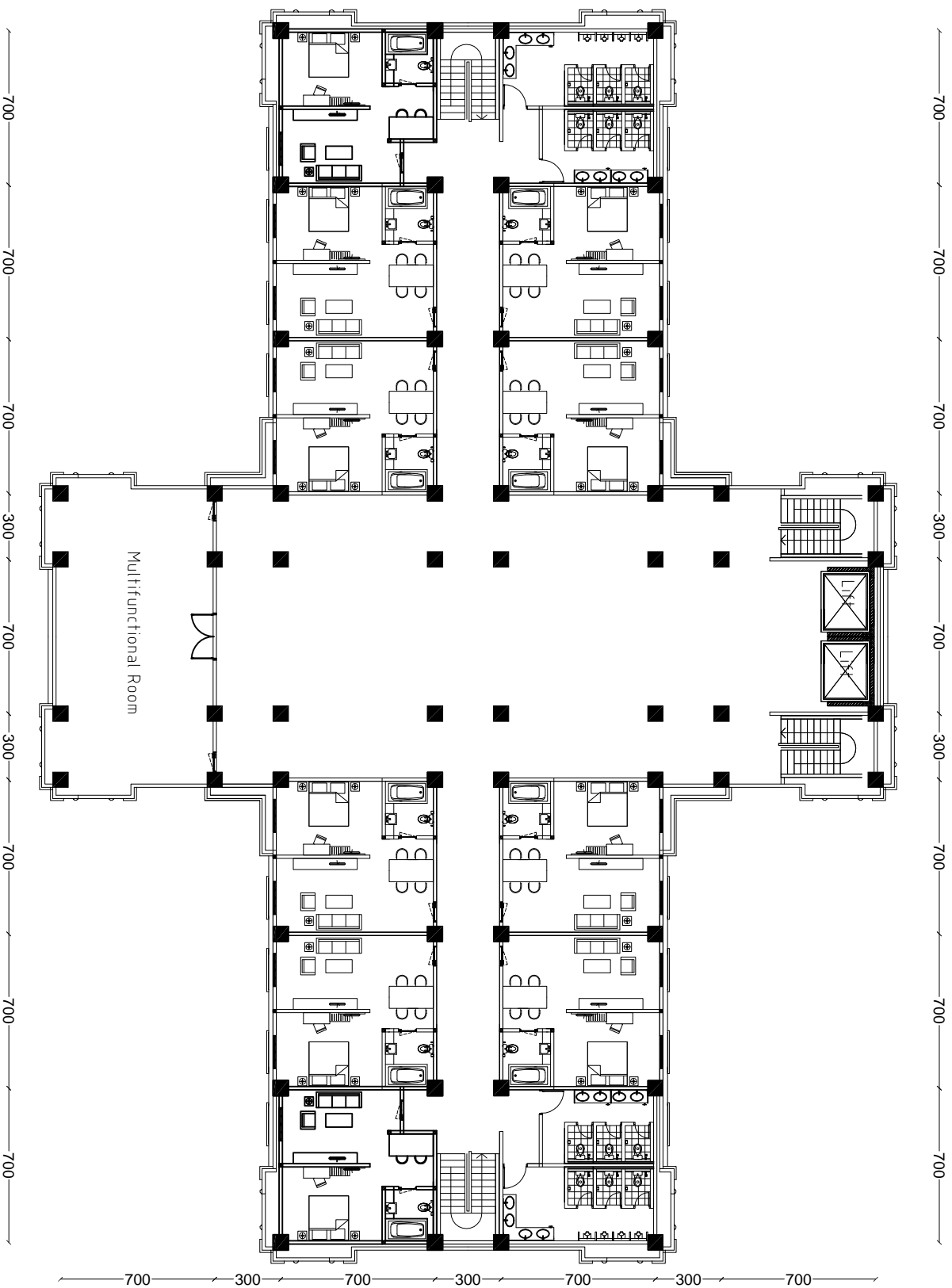
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BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
BASEMENT FLOOR PLAN	1 : 300

BASEMENT FLOOR PLAN

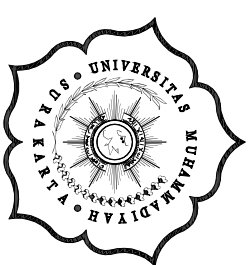
Scale 1 : 300



2,3,4,5,6th FLOOR PLAN

1:300

Scale 1:300



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SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
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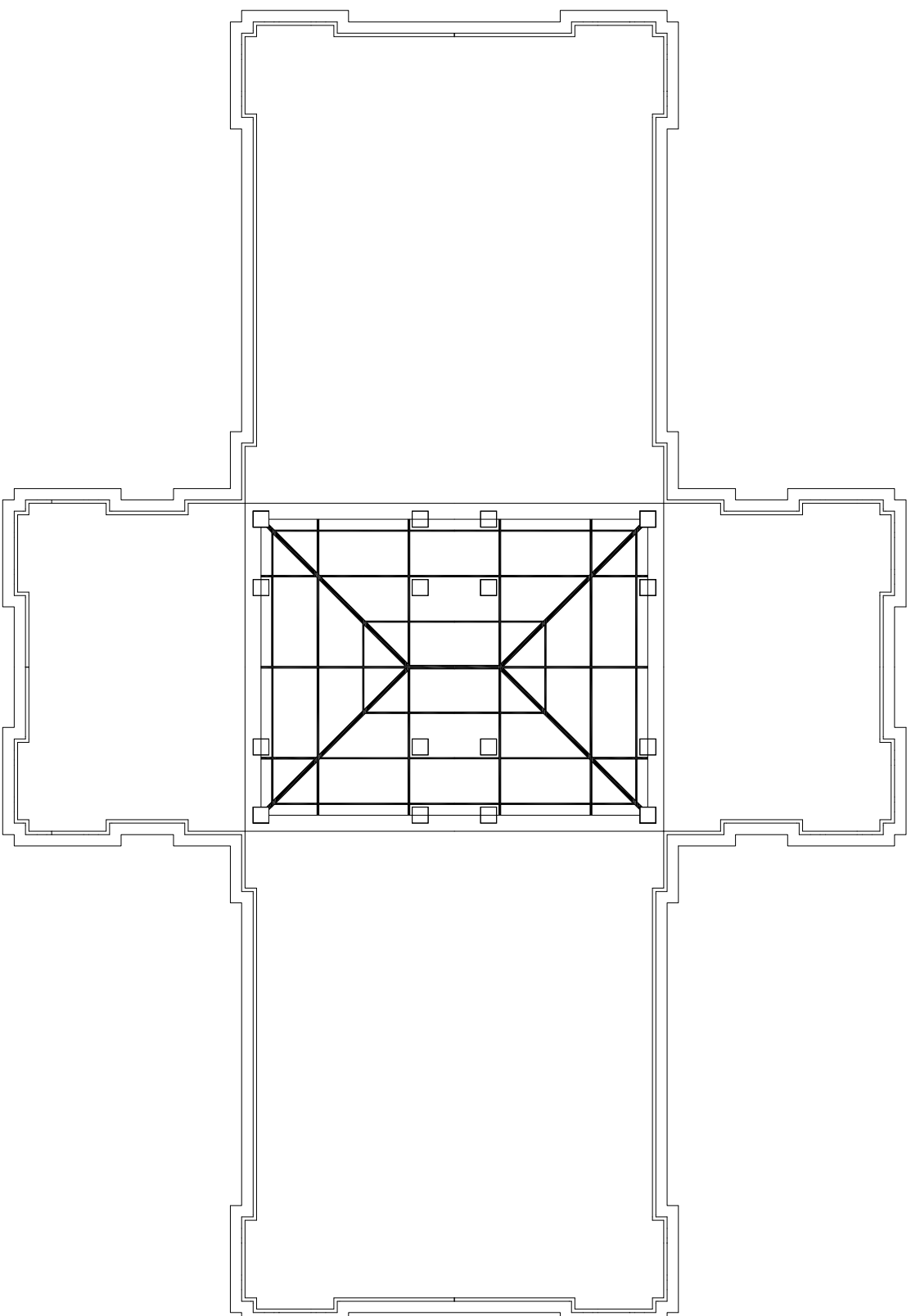
YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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ROOF FLOOR PLAN	1 : 300
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ROOF FLOOR PLAN

Scale 1 : 300

Table: Frame Section Assignments

Table: Frame Section Assignments					
Frame	SectionType	AutoSelect	AnalSect	DesignSect	MatProp
a1	Double Angle	N.A.	75.75.8	75.75.8	Default
a2	Double Angle	N.A.	75.75.8	75.75.8	Default
a3	Double Angle	N.A.	75.75.8	75.75.8	Default
a4	Double Angle	N.A.	75.75.8	75.75.8	Default
a5	Double Angle	N.A.	75.75.8	75.75.8	Default
a6	Double Angle	N.A.	75.75.8	75.75.8	Default
a7	Double Angle	N.A.	75.75.8	75.75.8	Default
a8	Double Angle	N.A.	75.75.8	75.75.8	Default
a9	Double Angle	N.A.	75.75.8	75.75.8	Default
b1	Double Angle	auto k1	60.60.6	60.60.6	Default
b2	Double Angle	auto k1	60.60.6	60.60.6	Default
b3	Double Angle	auto k1	60.60.6	60.60.6	Default
b4	Double Angle	auto k1	60.60.6	60.60.6	Default
b5	Double Angle	auto k1	60.60.6	60.60.6	Default
b6	Double Angle	auto k1	60.60.6	60.60.6	Default
b7	Double Angle	auto k1	60.60.6	60.60.6	Default
b8	Double Angle	auto k1	60.60.6	60.60.6	Default
b9	Double Angle	auto k1	60.60.6	60.60.6	Default
d1	Double Angle	auto k1	60.60.6	60.60.6	Default
d2	Double Angle	auto k1	60.60.6	60.60.6	Default
d3	Double Angle	auto k1	60.60.6	60.60.6	Default
d4	Double Angle	auto k1	60.60.6	60.60.6	Default
d5	Double Angle	auto k1	60.60.6	60.60.6	Default
d6	Double Angle	auto k1	60.60.6	60.60.6	Default
d7	Double Angle	auto k1	60.60.6	60.60.6	Default
d8	Double Angle	auto k1	60.60.6	60.60.6	Default
v1	Double Angle	auto k1	60.60.6	60.60.6	Default
v2	Double Angle	auto k1	60.60.6	60.60.6	Default
v3	Double Angle	auto k1	60.60.6	60.60.6	Default
v4	Double Angle	auto k1	60.60.6	60.60.6	Default
v5	Double Angle	auto k1	60.60.6	60.60.6	Default
v6	Double Angle	auto k1	60.60.6	60.60.6	Default
v7	Double Angle	auto k1	60.60.6	60.60.6	Default
v8	Double Angle	auto k1	60.60.6	60.60.6	Default
a10	Double Angle	N.A.	75.75.8	75.75.8	Default



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision Date Signature

Drawing by

YUSRON ABDULLATIF RABBANI
D 100 1110 029

Accepted by

Lecturer I

YENNY NURCHASANAH ST MT

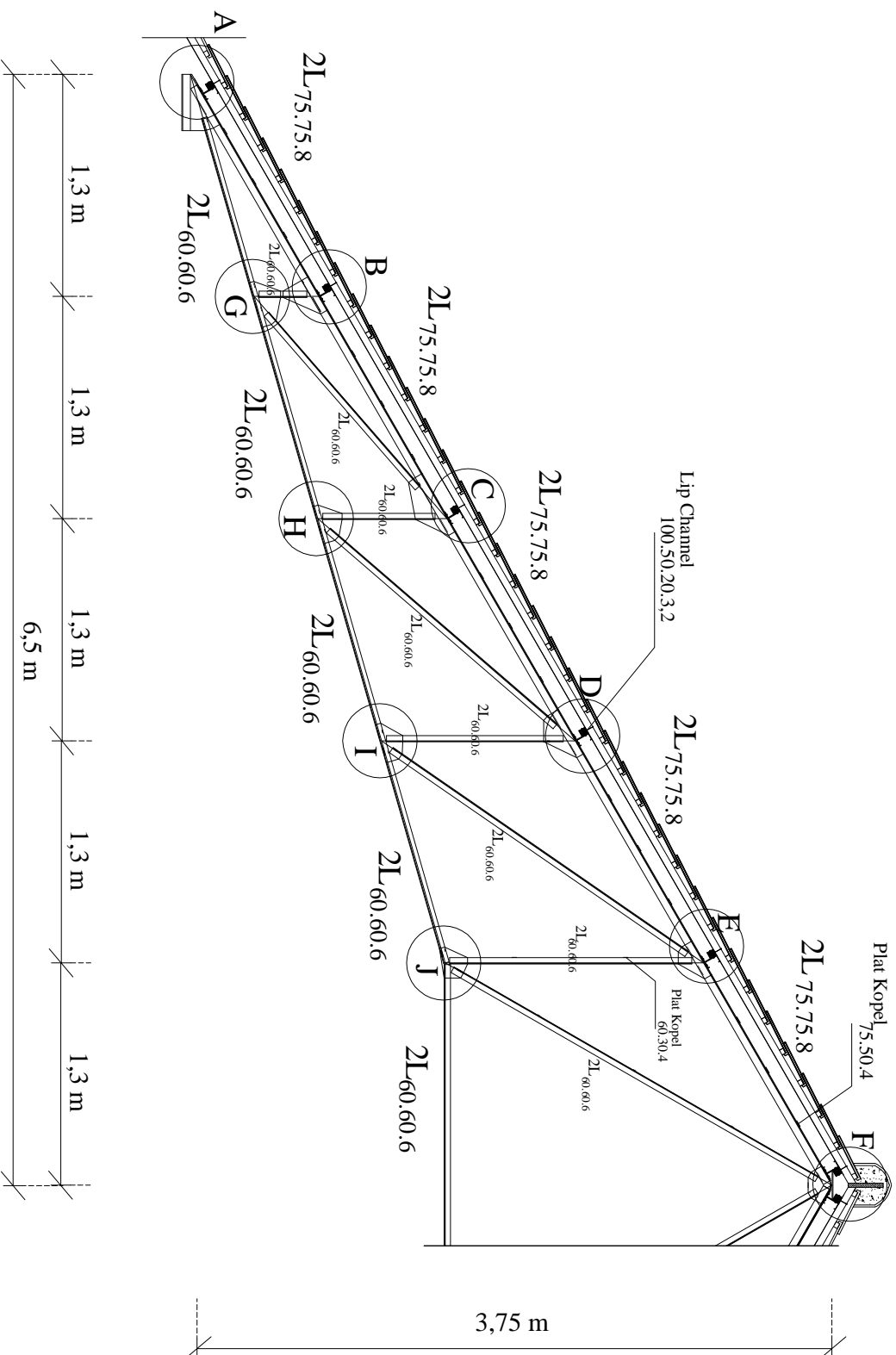
Accepted by

Lecturer II

BUDI SETIAWAN, S.T., M.T.

Title Scale

Half roof frame view 1 : 50





UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNI
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

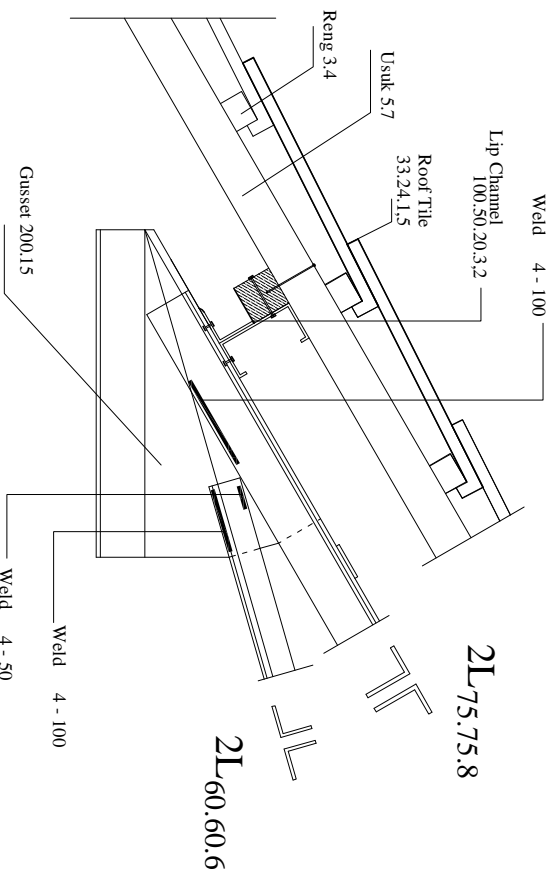
Revision	Date	Signature

Drawing by
YUSRON ABDULLATIF RABBANI D 100 110 072
Accepted by
Lecturer I

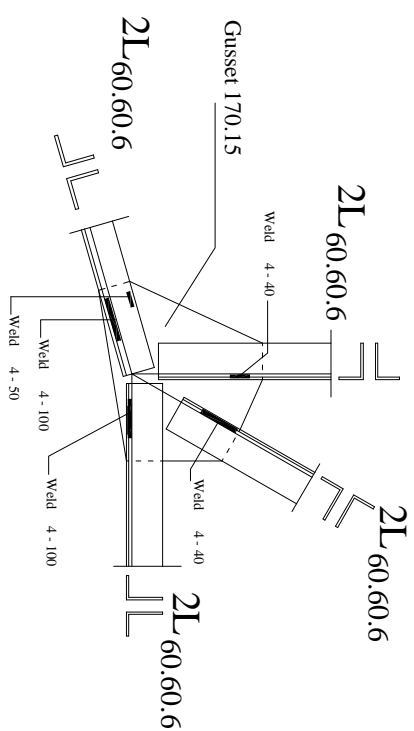
Accepted by
Lecturer II
YENNY NURCHASANAH,ST,MT

BUDI SETIAWAN, S.T, M.T	
Title	Scale

Detail Connection A and J	1 : 10
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Gusset Detail A
Scale 1 : 10



Gusset detail J
Scale 1 : 10



UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNI
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBANI
D 100 110 072

Accepted by

Lecturer I

YENNY NURCHASANAH ST MT

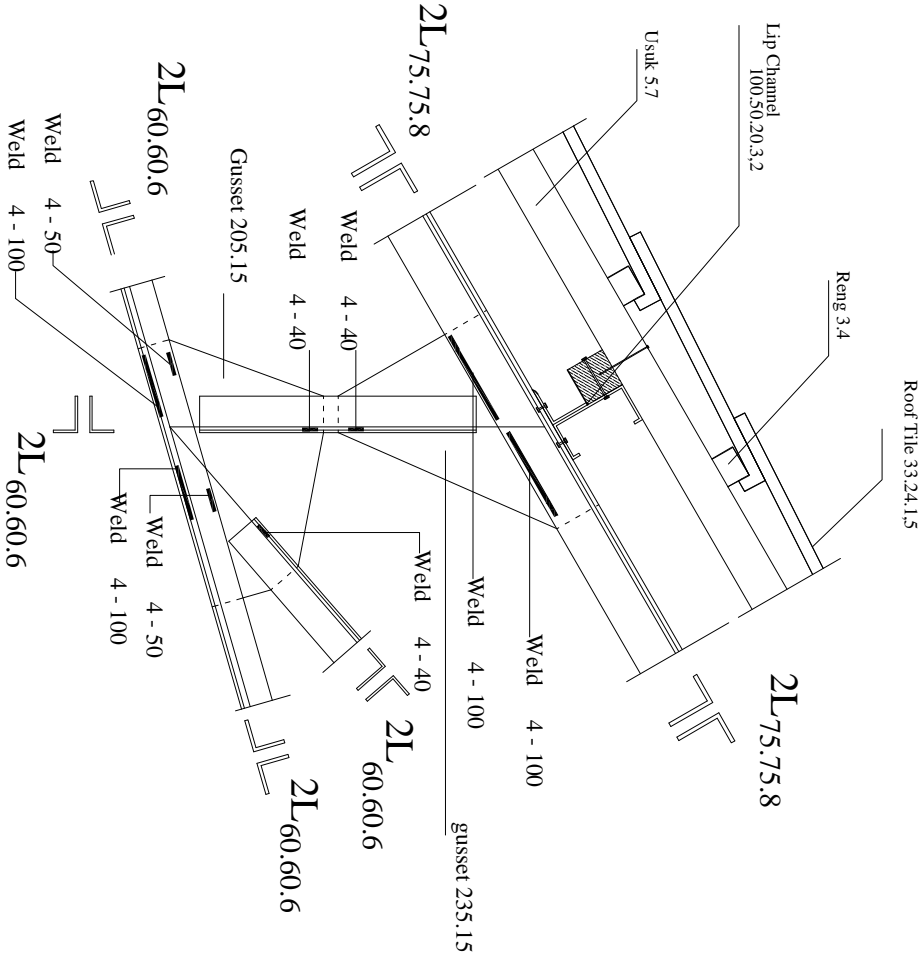
Accepted by

Lecturer II

BUDI SETIAWAN, S.T. M.T

Title	Scale
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Detail Connection H and D	1 : 10
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UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

6 FLOOR AND 1 BASEMENT HOTEL PLANNI
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

Type Activity		

Drawing by
YUSRON ABDULLATIF RABBANI
D 100 110 072

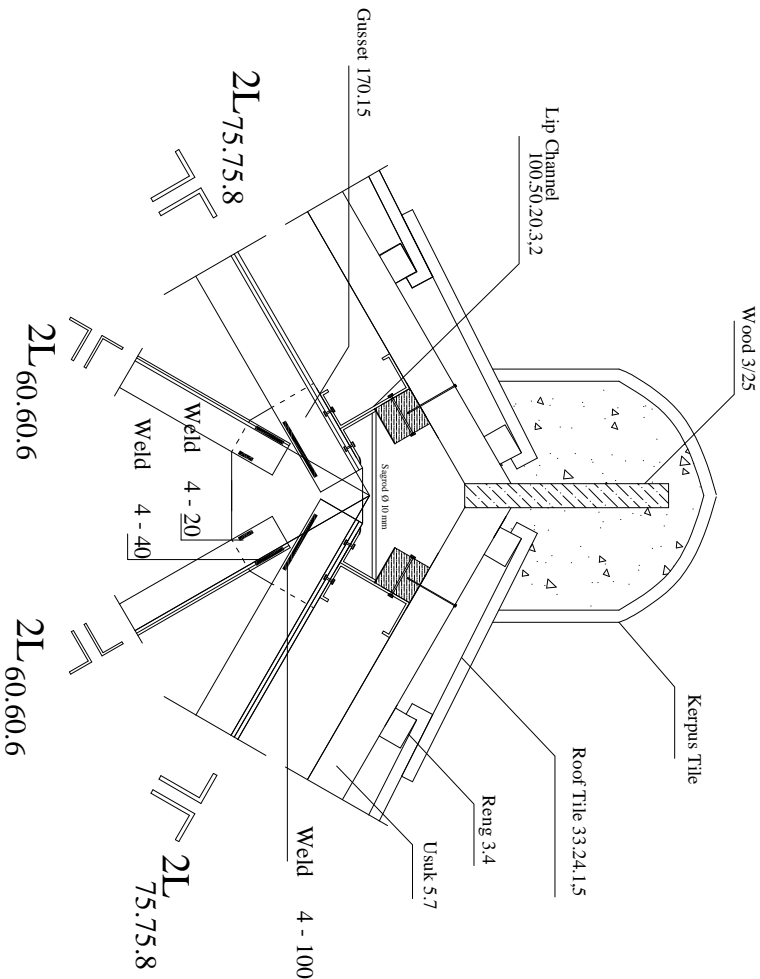
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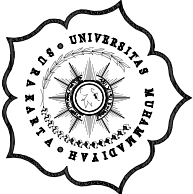
Accepted by
Lecturer II

YENNY NURCHASANAH ST MT

BUDI SETIAWAN, S.T. M.T

Title	Scale
Detail Connection F	1 : 10





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SURAKARTA

ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH ST.M

Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
roof slab reinforcement type A	1:40



UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

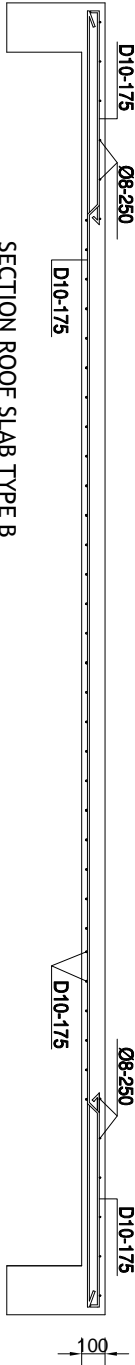
YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by
Lecturer I

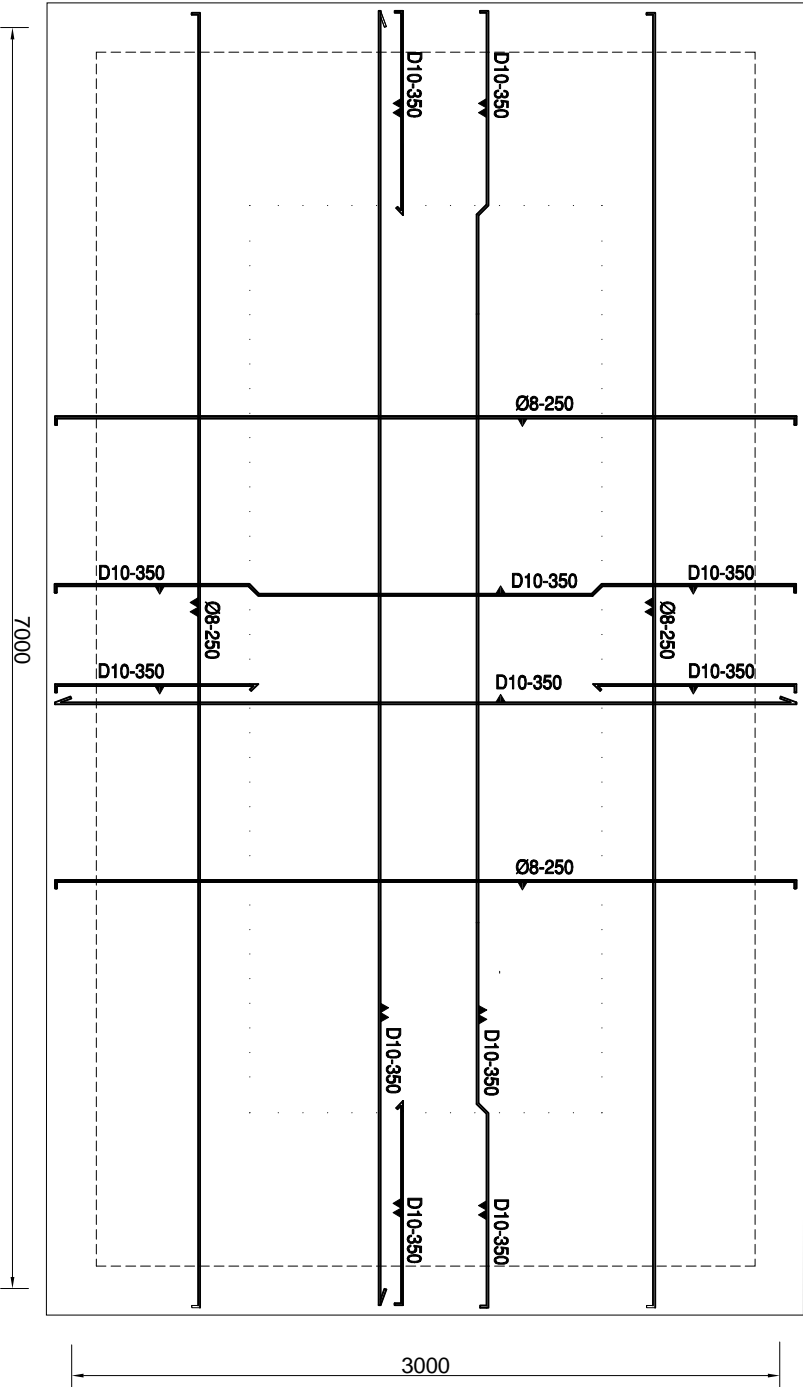
YENNY NURCHASANAH STM
Accepted by
Lecturer II

BUDI SETIAWAN, S.T. MT

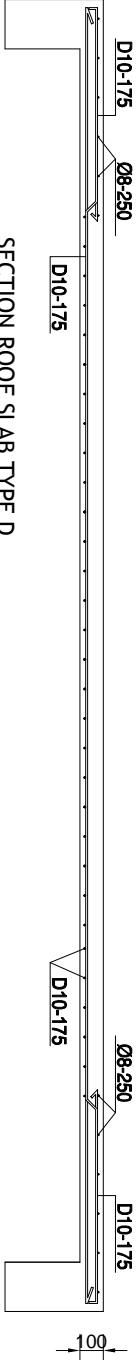
Title	Scale
roof slab reinforcement type B	1:40



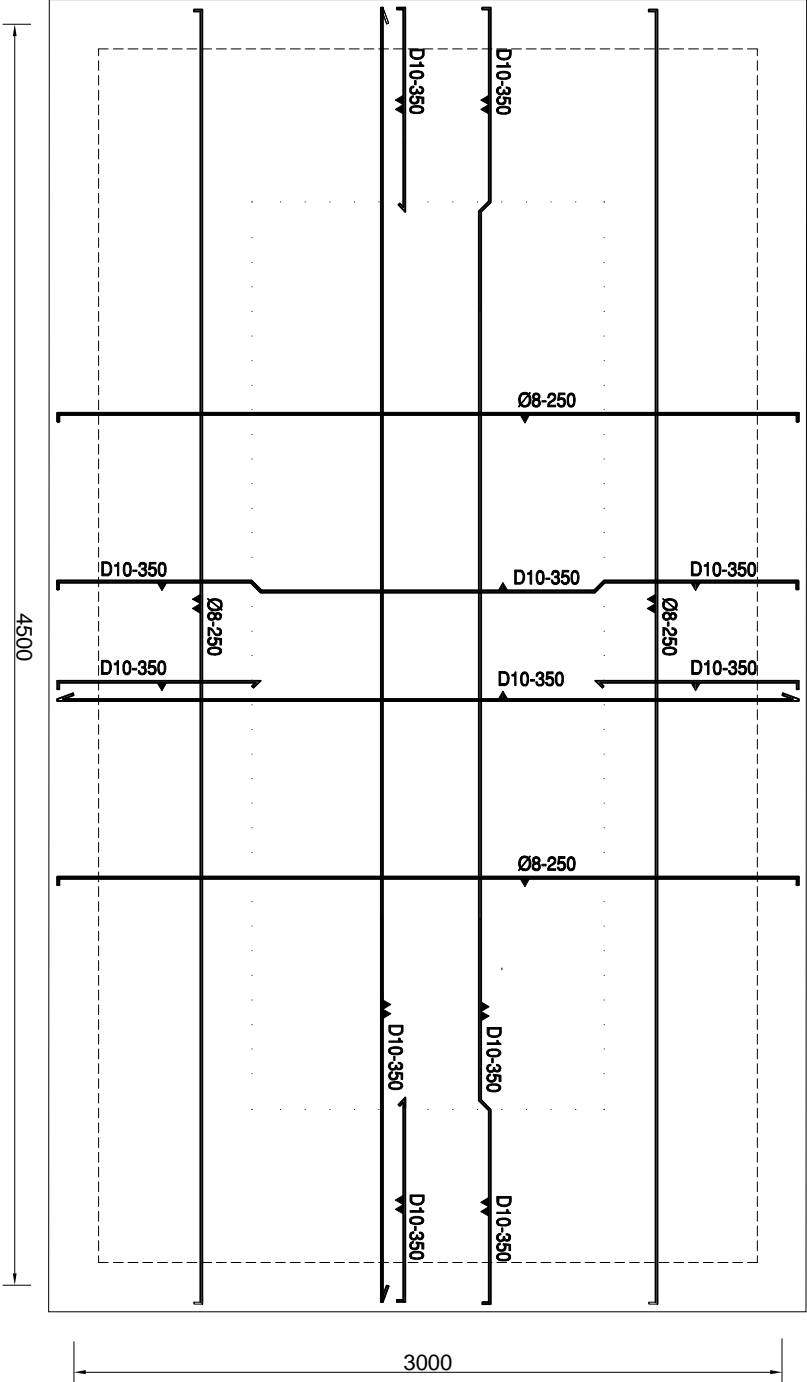
SECTION ROOF SLAB TYPE B



ROOF SLAB TYPE B



SECTION ROOF SLAB TYPE D



ROOF SLAB TYPE D



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH ST.M

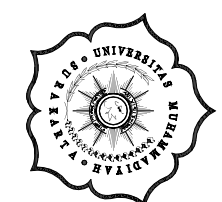
Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
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roof slab reinforcement type D	1:40
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UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTTA

Revision	Date	Signature
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Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH, ST.M

Accepted cy

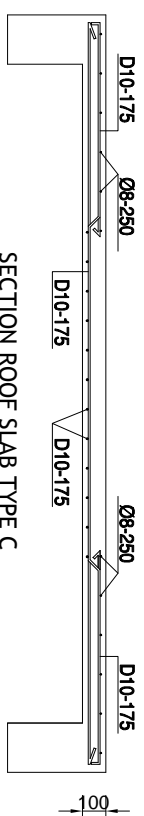
Lecturer II

BUDI SETIAWAN, S.T, M.T

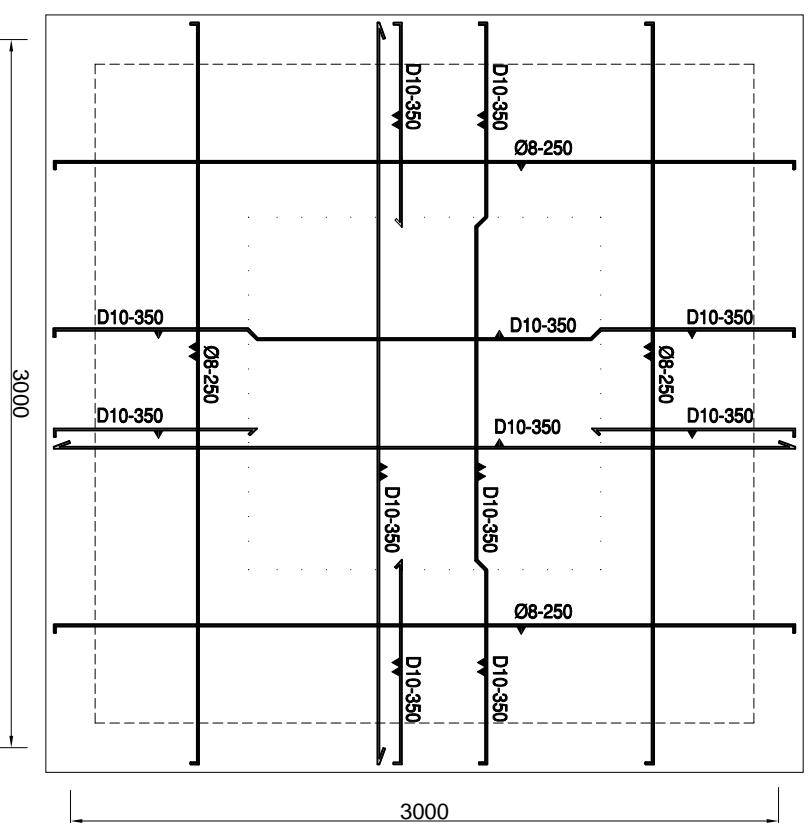
Title	Scale
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roof slab reinforcement type C	1:40
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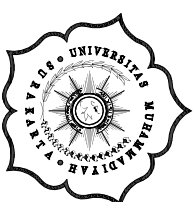
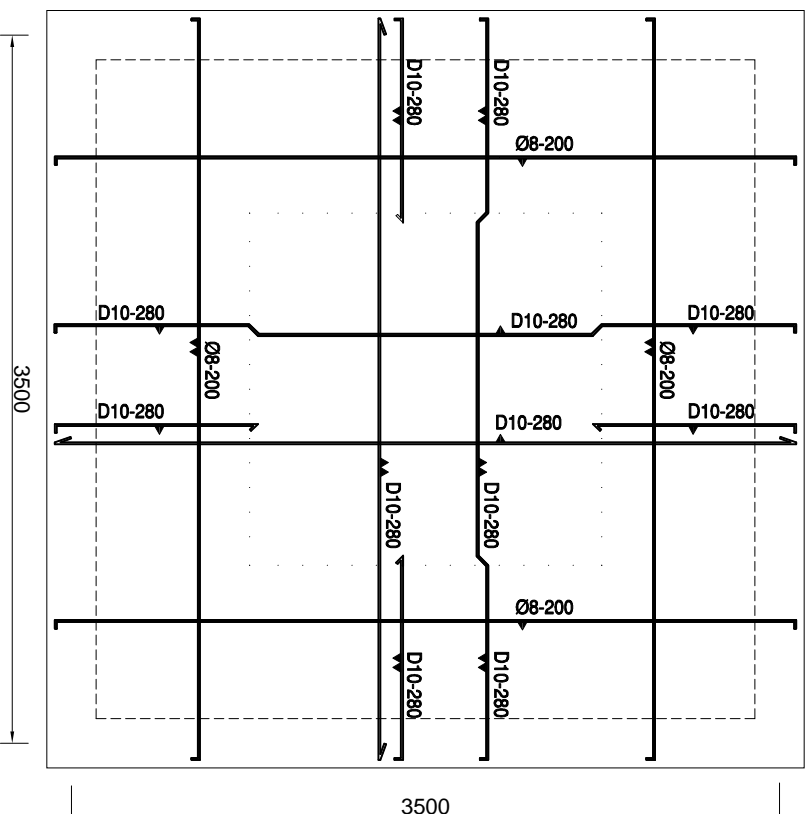
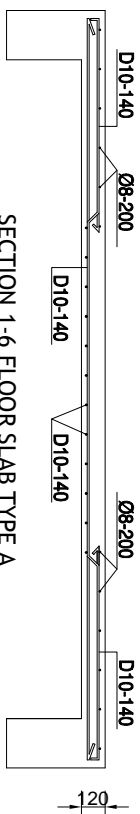
1:4(



SECTION ROOF SLAB TYPE C



ROOF SLAB TYPE C



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SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

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Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

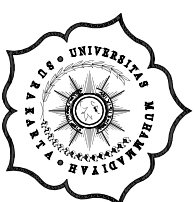
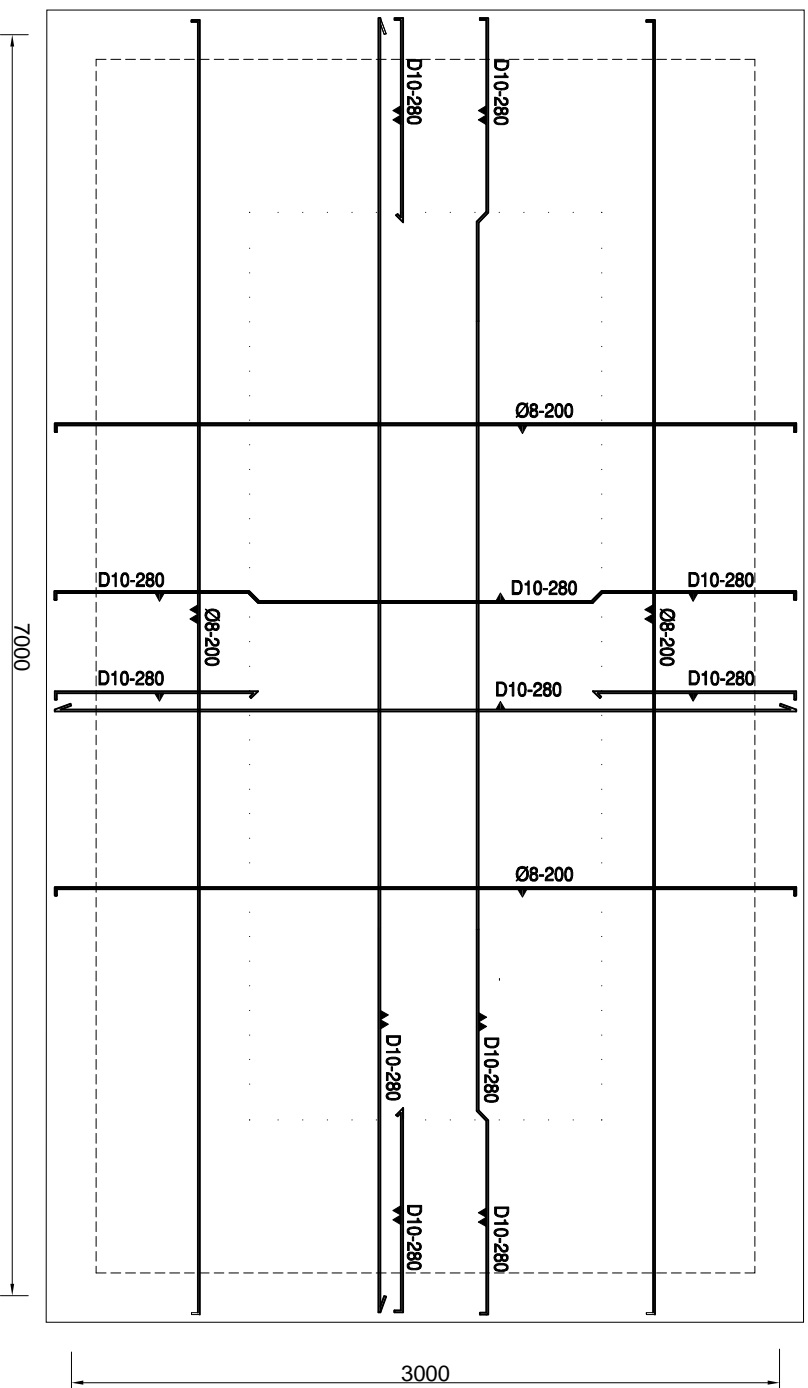
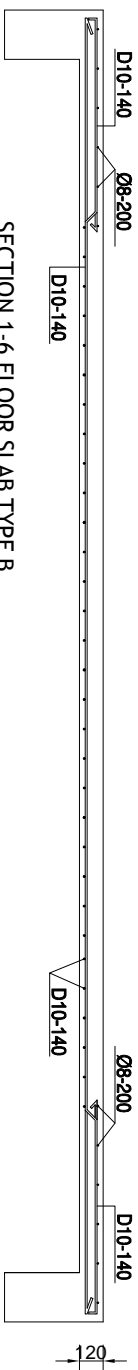
Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
1-6 Floor slab reinforcement type A	1:40

1-6 Floor slab
reinforcement type A

1:40



UNIVERSITAS MUHAMMADIYAH
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ENGINEERING FACULTY
CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

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Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
1-6 floor slab reinforcement type B	1:40



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CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

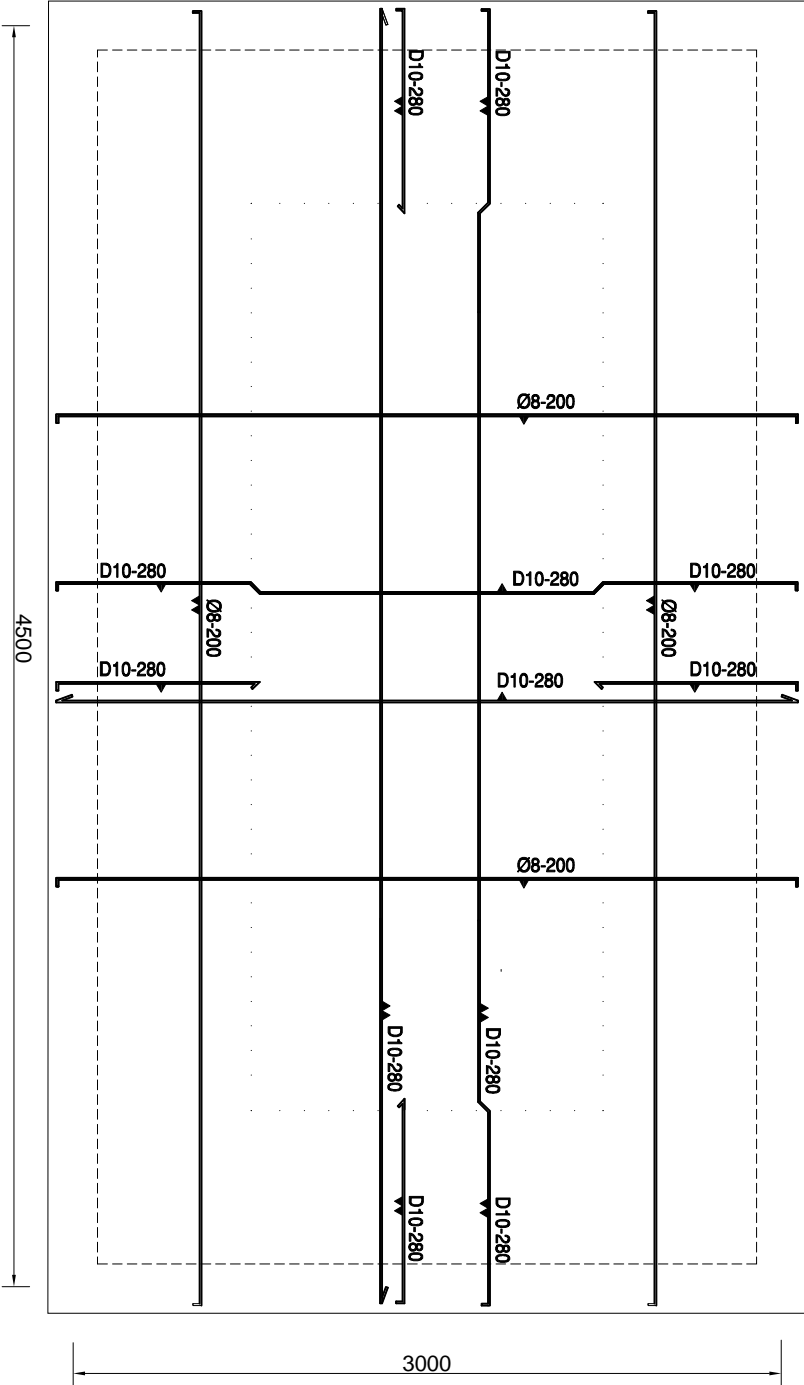
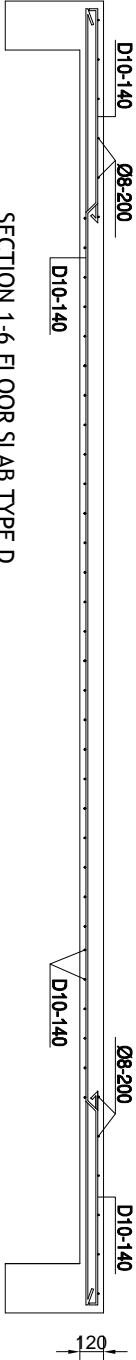
Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
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1-6 floor slab reinforcement type D	1:40
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UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH ST.M

Accepted by

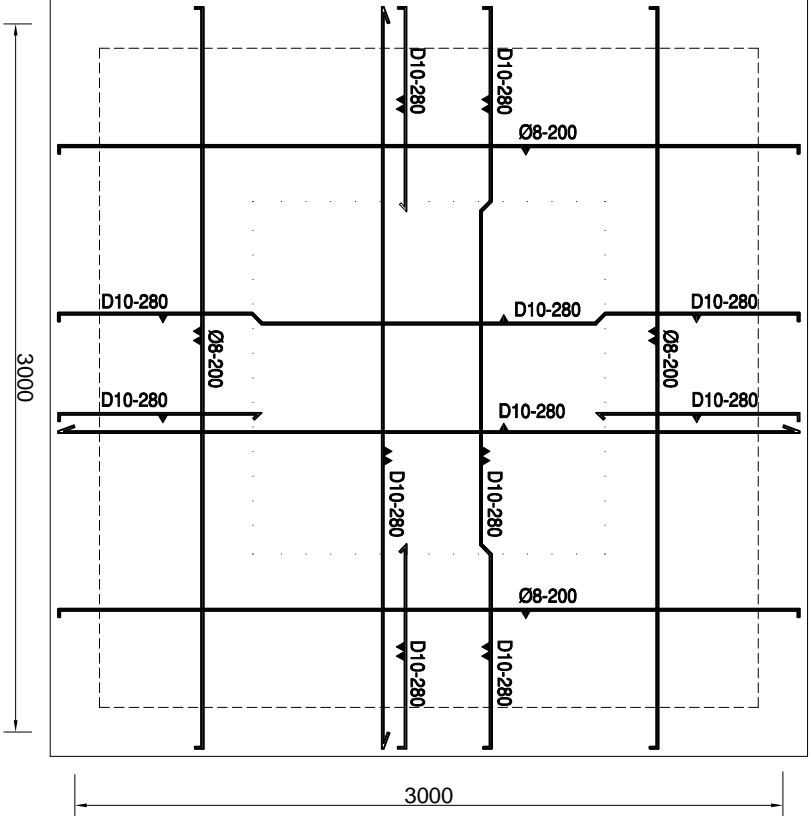
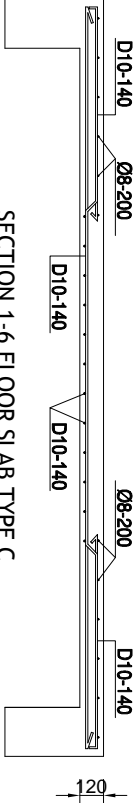
Lecturer II

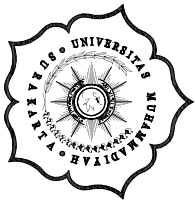
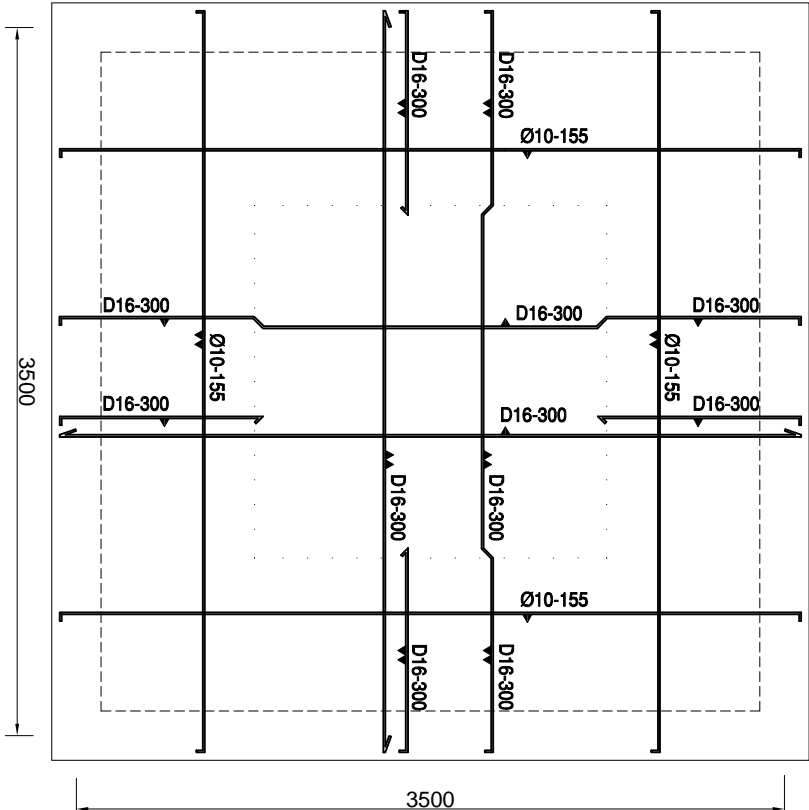
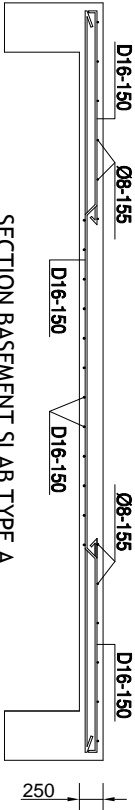
BUDI SETIAWAN, S.T. MT

Title

1-6 floor slab
reinforcement type C

1:40





UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
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6 FLOOR AND 1 BASEMENT HOTEL PLANNING
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IN SURAKARTA

Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

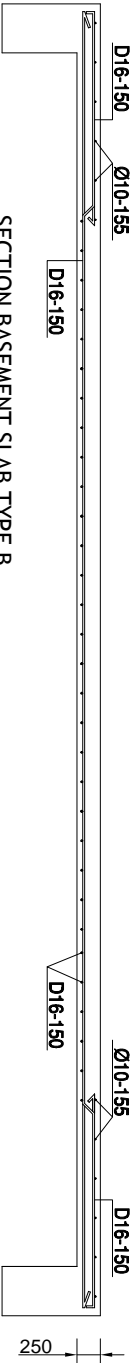
YENNY NURCHASANAH STM

Accepted by

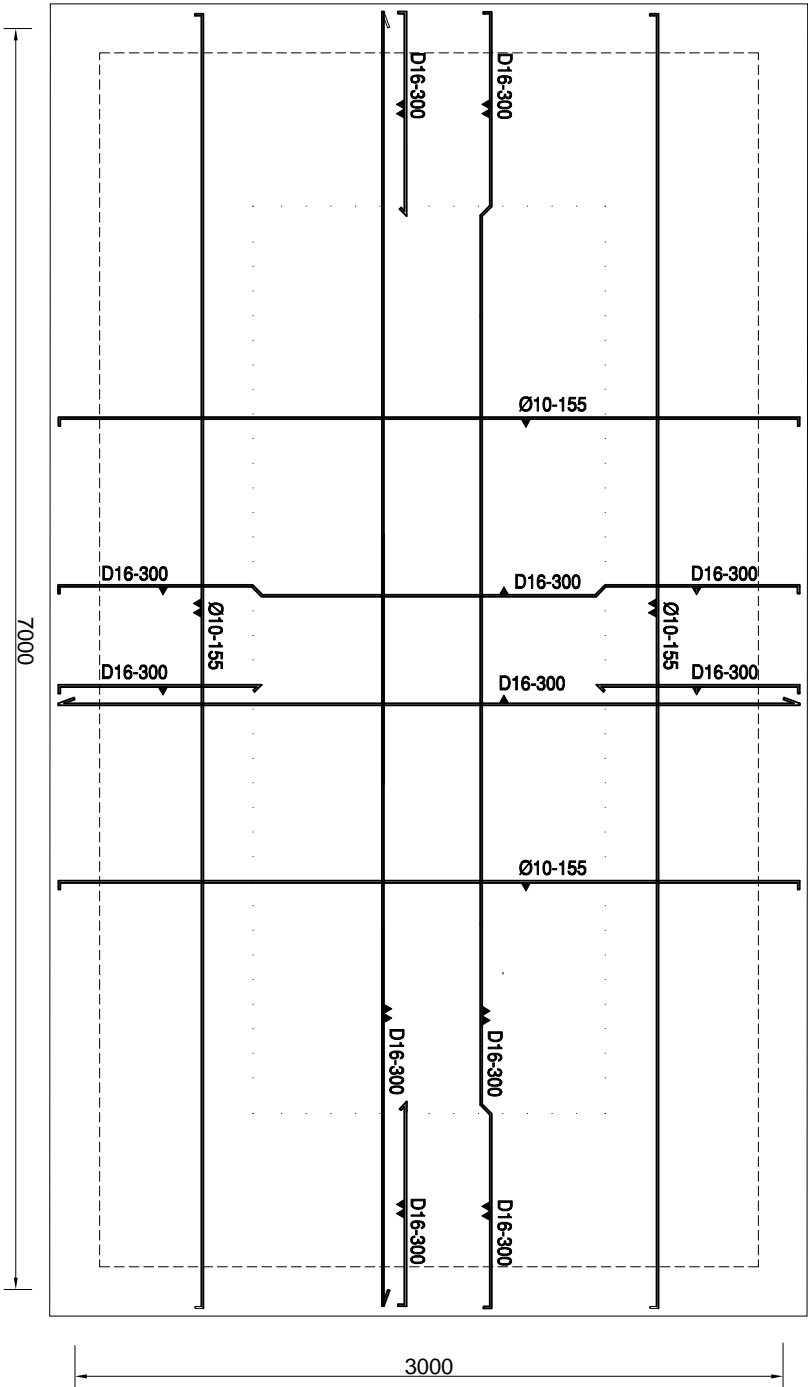
Lecturer II

BUDI SETIAWAN, S.T. MT

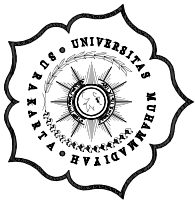
Title	Scale
basement floor slab reinforcement type A	1:40



SECTION BASEMENT SLAB TYPE B



BASEMENT FLOOR SLAB TYPE B



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

Lecturer II

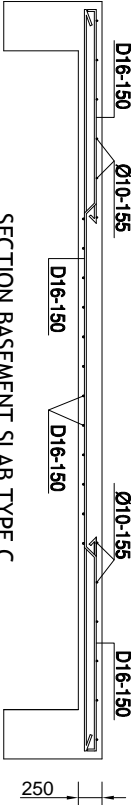
BUDI SETIAWAN, S.T. MT

Title

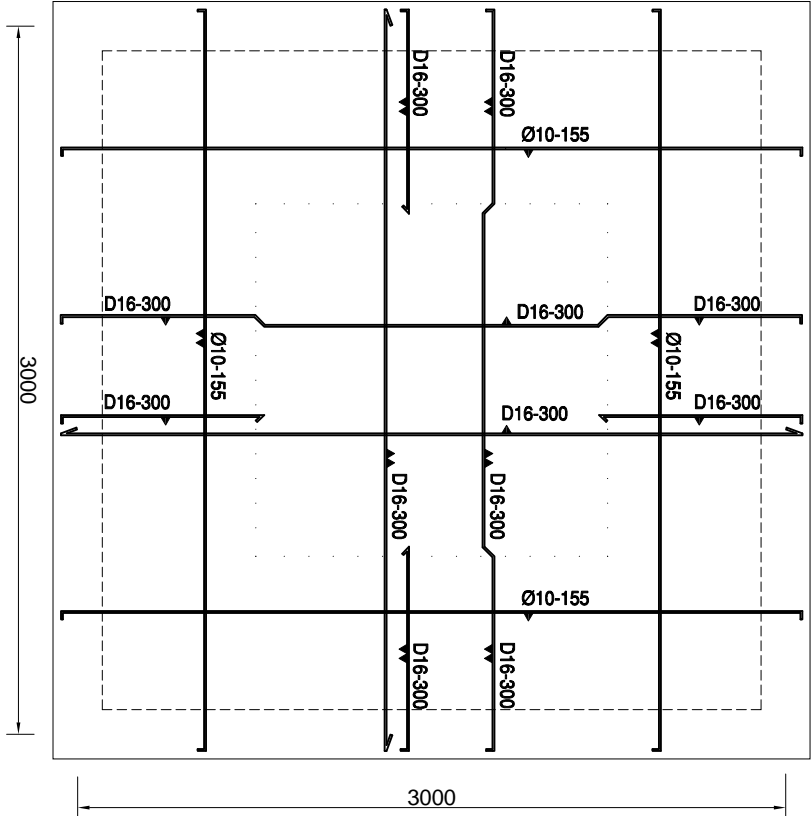
Scale

basement floor slab
reinforcement type B

1:40



SECTION BASEMENT SLAB TYPE C



BASEMENT FLOOR SLAB TYPE C



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SURAKARTA
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Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
basement floor slab reinforcement type C	1:40



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Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

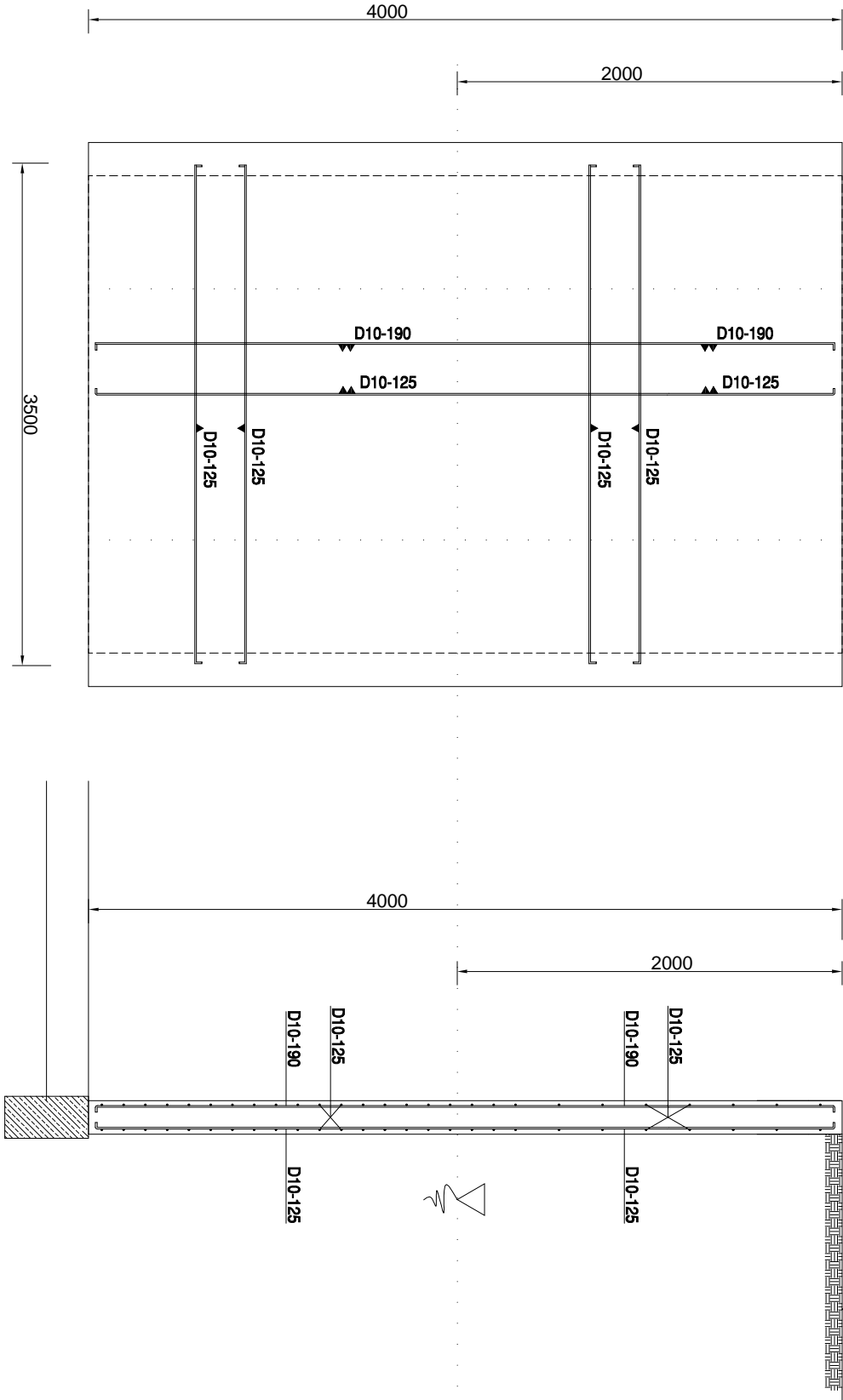
Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
basement wall reinforcement	1:40

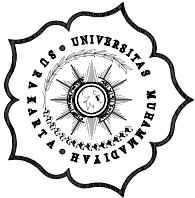
M.T.A

200



BASEMENT WALL

BASEMENT WALL SECTION



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SURAKARTA

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CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature

Drawing by

YUSRON ABDULLATIF RABBA
ID 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

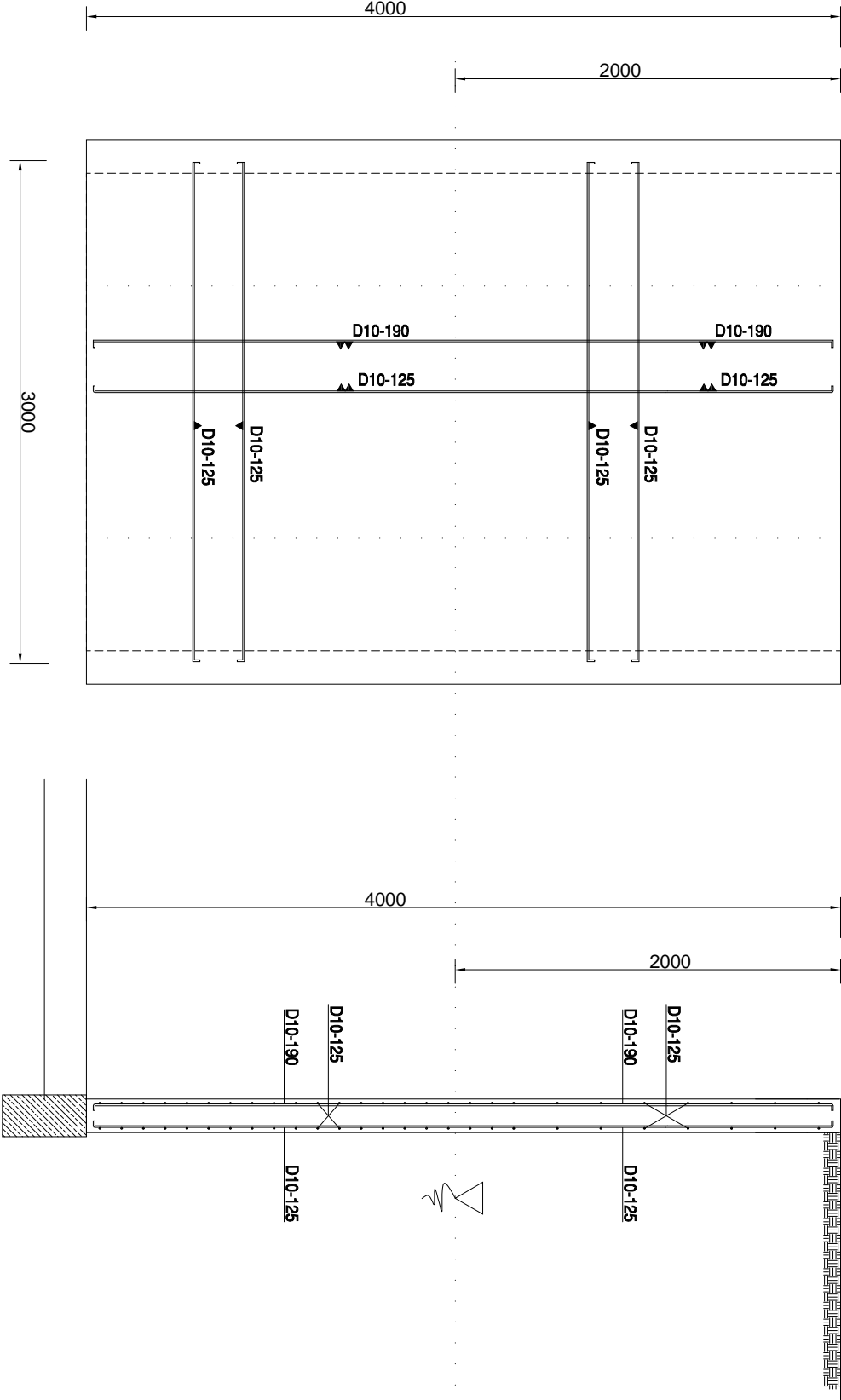
Accepted by

Lecturer II

BUDI SETIAWAN, S.T. MT

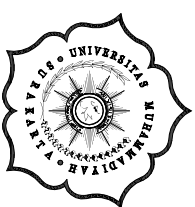
Title	Scale
Penulangan dinding basement	1:40

M.T.A



BASEMENT WALL

BASEMENT WALL SECTION



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CIVIL ENGINEERING PROGRA

Type Activity

6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

Revision	Date	Signature
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Drawing by

YUSRON ABDULLATIF RABBA
D 100 110 029

Accepted by

Lecturer I

YENNY NURCHASANAH STM

Accepted by

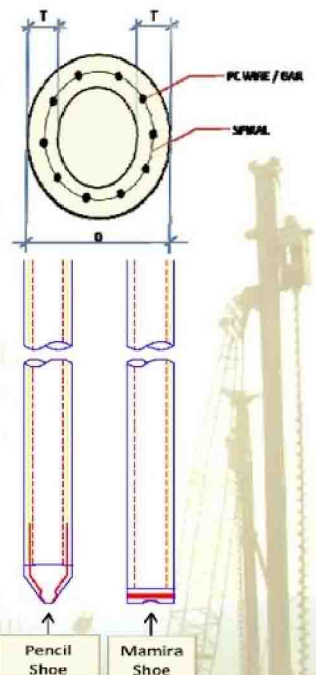
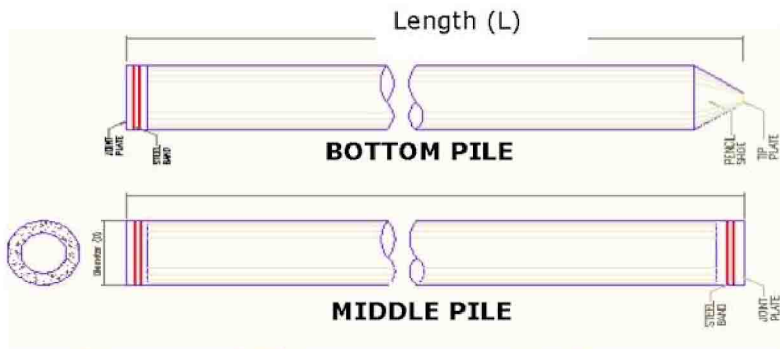
Lecturer II

BUDI SETIAWAN, S.T. MT

Title	Scale
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stair and bordes reinforcement	1:40
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Shape and Dimension



Classification

Outside Diameter D (mm)	Wall Thickness T (mm)	Class	Concrete Cross Section (cm ²)	Unit Weight (kg/m)	Length L (M)	Bending Moment		Allowable Axial Load (Ton)
						Crack (Ton.m)	Ultimate (Ton.m)	
300	60	A2	452	113	6 - 13	2.50	3.75	72.60
		A3				3.00	4.50	70.75
		B				3.50	6.30	67.50
		C				4.00	8.00	65.40
350	65	A1	582	145	6 - 15	3.50	5.25	93.10
		A3				4.20	6.30	89.50
		B				5.00	9.00	86.40
		C				6.00	12.00	85.00
400	75	A2	766	191	6 - 16	5.50	8.25	121.10
		A3				6.50	9.75	117.60
		B				7.50	13.50	114.40
		C				9.00	18.00	111.50
450	80	A1	930	232	6 - 16	7.50	11.25	149.50
		A2				8.50	12.75	145.80
		A3				10.00	15.00	143.80
		B				11.00	19.80	139.10
		C				12.50	25.00	134.90
500	90	A1	1159	290	6 - 16	10.50	15.75	185.30
		A2				12.50	18.75	181.70
		A3				14.00	21.00	178.20
		B				15.00	27.00	174.90
		C				17.00	34.00	169.00
600	100	A1	1571	393	6 - 16	17.00	25.50	252.70
		A2				19.00	28.50	249.00
		A3				22.00	33.00	243.20
		B				25.00	45.00	238.30
		C				29.00	58.00	229.50
800	120	A1	2564	641	6 - 24	40.70	63.60	415.00
		A2				46.20	84.40	406.20
		A3				51.00	97.80	398.20
		B				55.70	108.20	390.80
		C				70.60	129.80	367.60
1000	140	A1	3872	946	6 - 24	75.00	117.90	614.00
		A2				82.30	139.80	604.80
		A3				93.30	170.90	590.60
		B				105.70	199.70	575.00
		C				123.60	229.90	552.90
1200	150	A1	4948	1237	6 - 24	120.00	180.00	802.40
		A2				130.00	195.00	794.00
		A3				145.00	217.50	778.10
		B				170.00	306.00	751.50
		C				200.00	400.00	721.10



TESTANA ENGINEERING, Inc.

A.2.2. BORING LOG

BOREHOLE #: DB - 2

PROJECT: Quest Hotel.

DATE OF TESTING: January 21 to 24, 2013

GROUND WATER LEVEL: -1.00 m

LOCATION: Jl. Sutami No. 111, Solo.

DEPTH: 40 m

GROUND SURFACE LEVEL: ± 0.00 m

DEPTH (m)	SOIL DESCRIPTION	STANDARD PENETRATION TEST					LABORATORY TEST STRENGTH TEST					ATTERBERG LIMITS					γ	Gs	eo
		C	10	20	30	40	TYPE	c	φ	TYPE	σ _h ¹	σ _v ²	LL	PL	LI				
0.00	Silt and clay, dark brown, inorganic, trace sand, medium																		
0.50	Silt and clay, yellowish brown, inorganic, little sand																		
1.00	Silt and sand, brown, little clay, medium																		
1.50	Silt and clay, dark brown, inorganic, little sand, very stiff						UCT	0.79		CU	0.30 0.27	15 25	34	46	50	1.72	2.57	1.18	
2.00	Silt and clay, greenish brown, inorganic, trace sand, hard																		
2.50	Sand, brown to grey, cemented, very dense																		
3.00																			
3.50	Sand and silt, brown, some gravel, very dense																		
4.00																			
4.50	Fine sand and silt, brown, medium																		
5.00							UCT	1.19		CU	0.60 0.50	18 32	37	41	62	1.75	2.52	1.03	
5.50	Silt and clay, greenish brown to brown, inorganic, trace to little sand, contains gravel at 19.5 to 21 m depth, very stiff to hard																		
6.00																			
6.50	Sand, grey, trace silt, very dense																		
7.00																			
7.50	Sand, brown, little silt, dense						UCT	0.95		CU	0.50 0.25	14 31	35	40	53	1.76	2.54	1.02	
8.00																			
8.50	Silt and clay, greenish brown, inorganic, trace to little sand, very stiff																		
9.00																			
9.50	Silt and clay, brown, inorganic, trace sand																		
10.00																			
10.50	Silt and sand, brownish grey, little clay, dense																		
11.00																			
11.50	Sand, brown, trace silt, dense																		
12.00																			
12.50	Silt and sand, brown, little clay, medium																		
13.00																			
13.50	Clay and silt, greenish grey, inorganic, trace sand, hard																		
14.00																			
14.50																			
15.00																			
15.50																			
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38.50																			
39.00																			
39.50																			
40.00	End of boring																		

0 to 10 % = Trace
10 to 20 % = Little
20 to 35 % = Some
35 to 50 % = And

▣ = Undisturbed sample
▤ = SPT
▥ = Fairly undisturbed sample
c = Cohesion intercept, kg/cm²
φ = Internal friction angle, deg

SPT = Standard penetration test (blows / ft)
CU = Triaxial, Undrained undrained
CU = Triaxial, Consolidated undrained
Vane = Vane shear test
UCT = Unconfined compression strength, kg/cm²
QCT = Direct shear, quick test

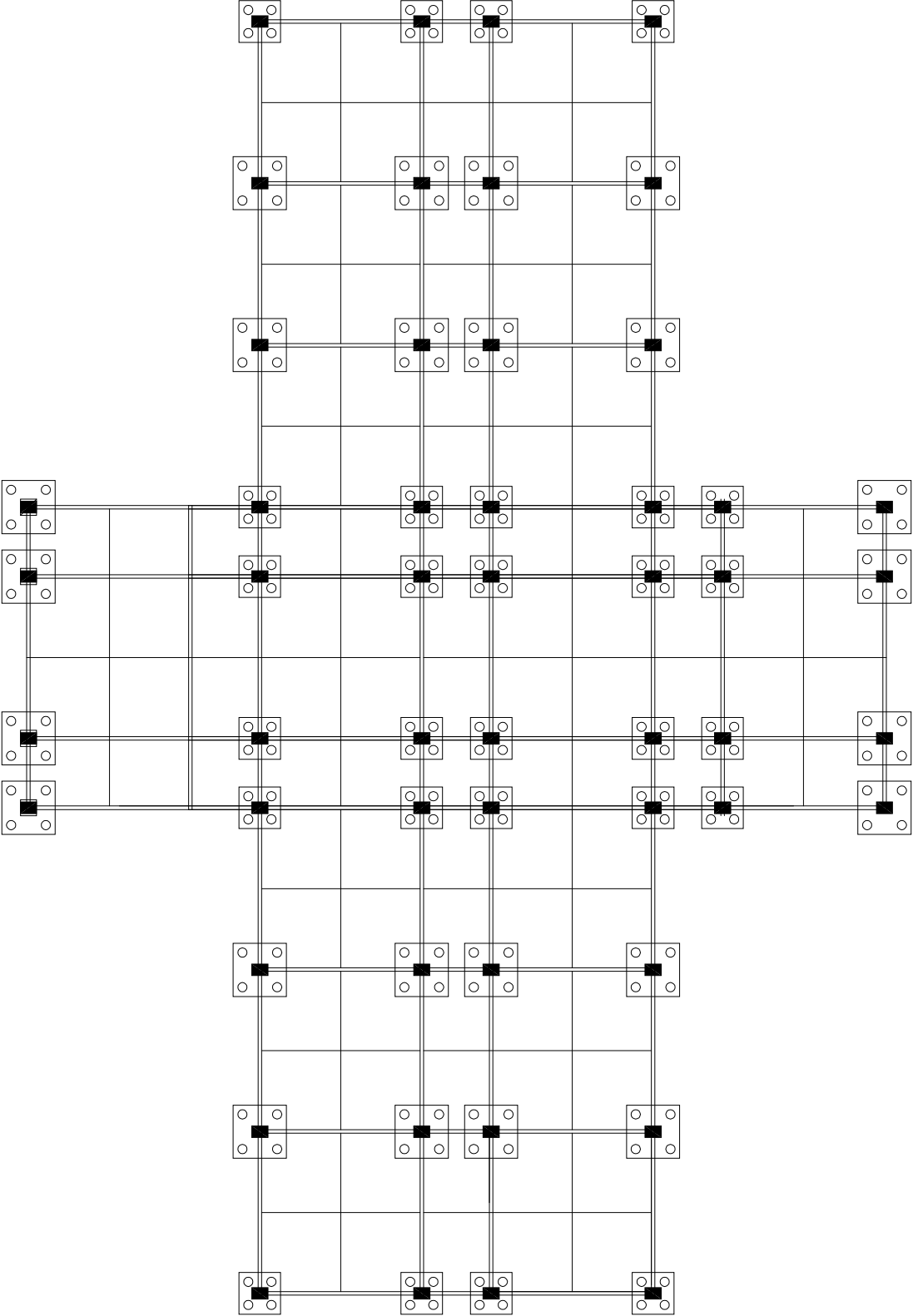
W_e = Moisture content, %
W_p = Plastic limit, %
W_L = Liquid limit, %
γ = Bulk density, t/m³
G_s = Specific gravity
e_n = Void ratio
S_r = Saturation, %

0 to 10 % = Trace
10 to 20 % = Little
20 to 35 % = Some
35 to 50 % = And

☒ = Undisturbed sample
☒ = SPT
☒ = Fairly undisturbed sample
 c = Cohesion (intercept, kg/cm²)
 φ = Internal friction angle (deg)

SPT = Standard penetration test (blows / ft)
 CU = Triaxial, Unconsolidated undrained
 CU = Triaxial, Consolidated undrained
 Vane = Vane shear test
 UCT = Unconfined compression strength, kg/cm²
 CT = Direct shear, quick test

W_a = Moisture content, %
 W_p = Plastic limit, %
 W_L = Liquid limit, %
 γ = Bulk density, t/m³
 G_s = Specific gravity
 e_v = Void ratio
 S_r = Saturation, %



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

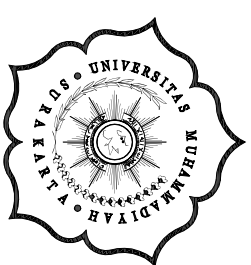
YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FOUNDATION SITE



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

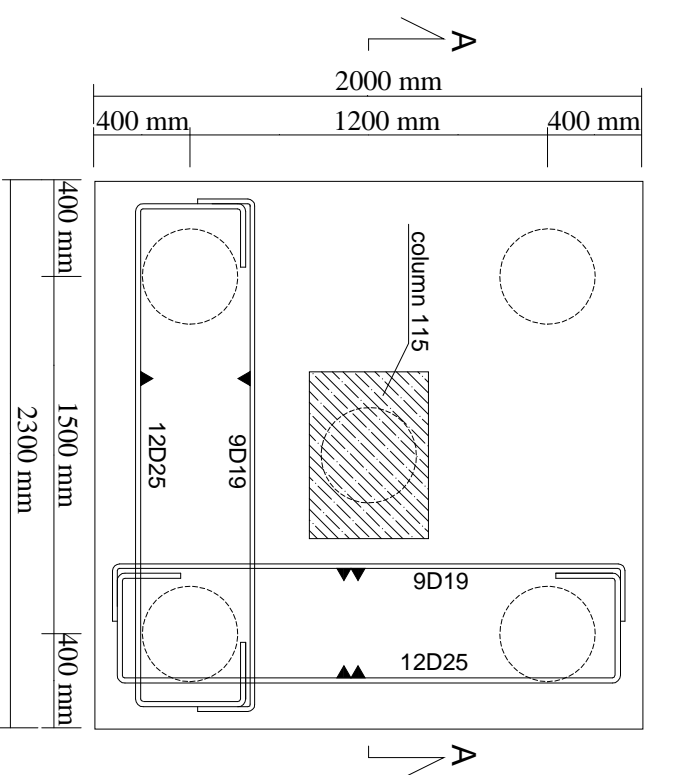
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APPROVED

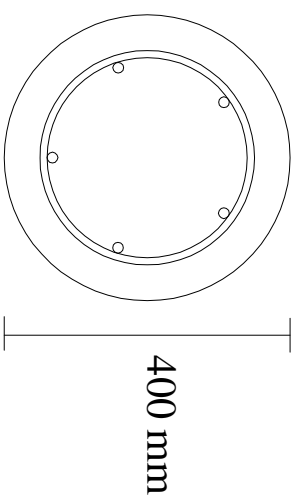
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IMAGE TITLE	SCALE
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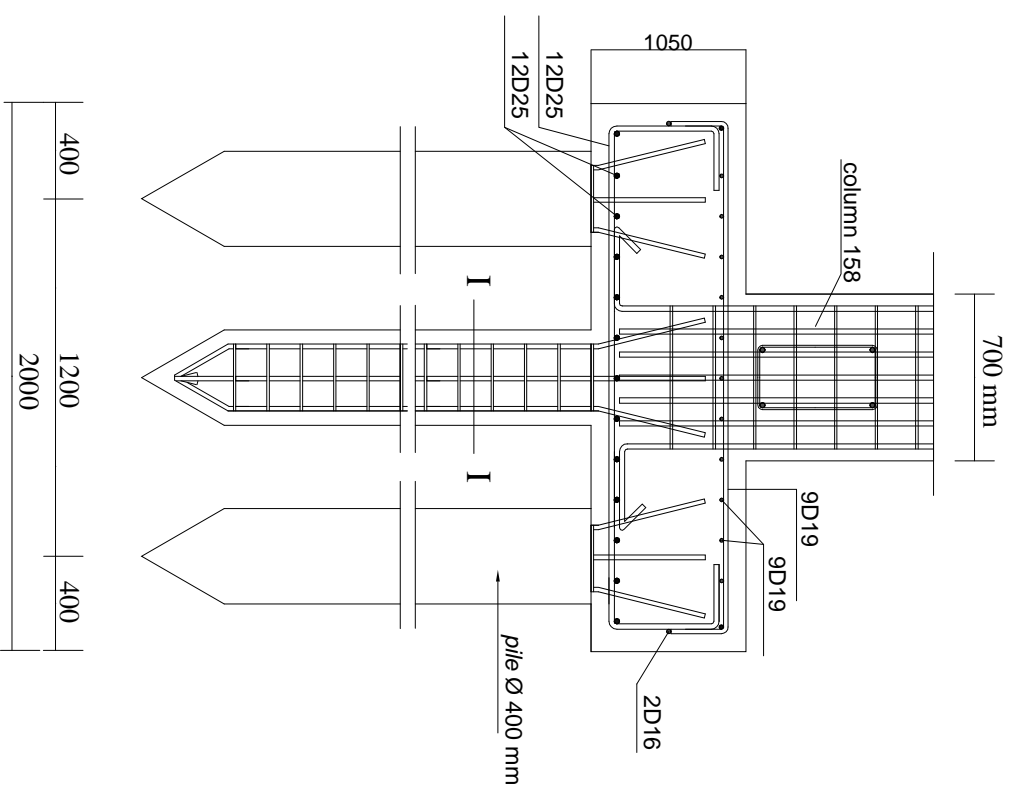
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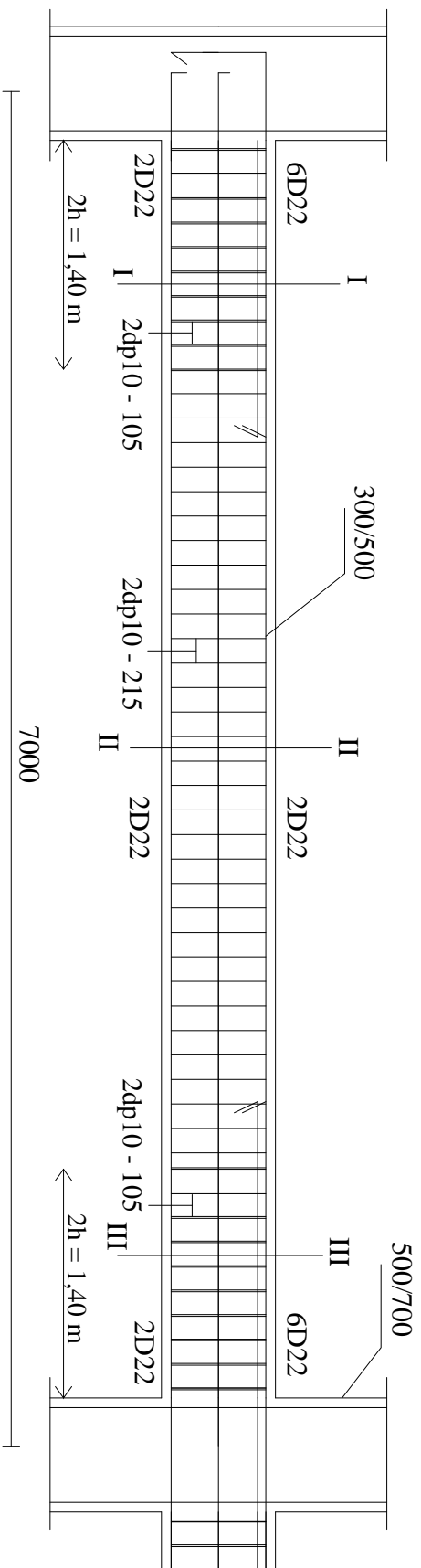
FOUNDATION K-115 PORTAL AS-4



SECTION I-I

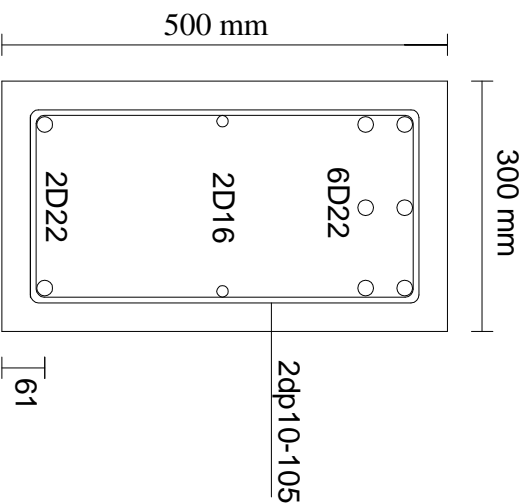


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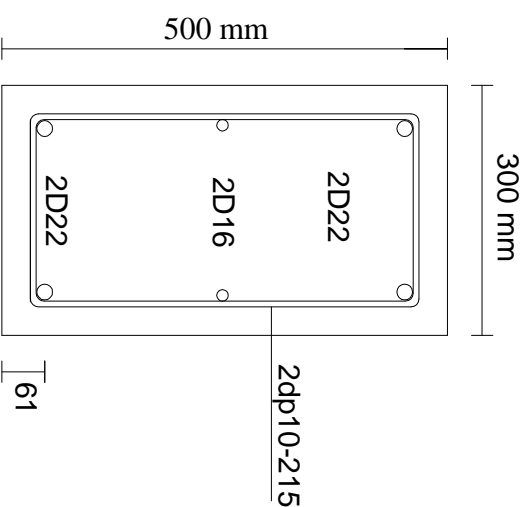


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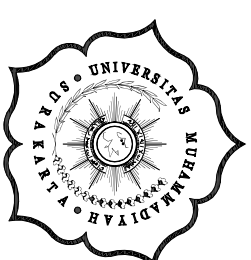
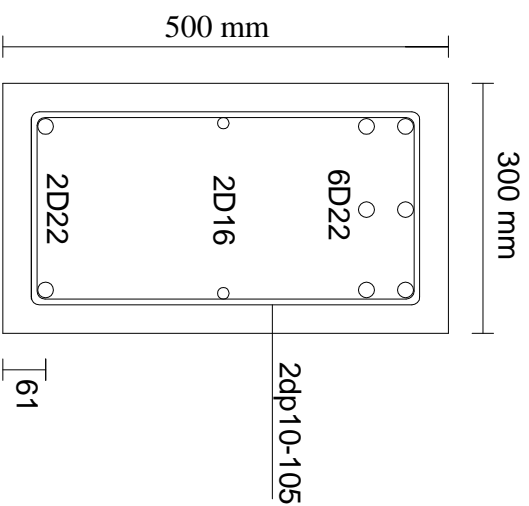
SECTION I-I



SECTION II-II



SECTION III-III



UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION DATE SIGNATURE

DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

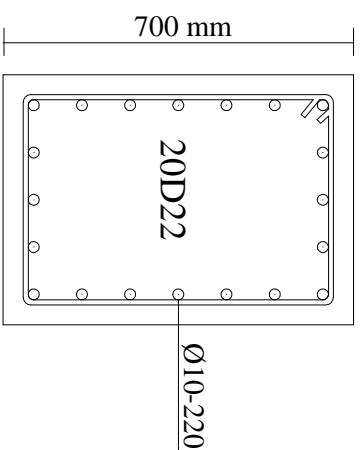
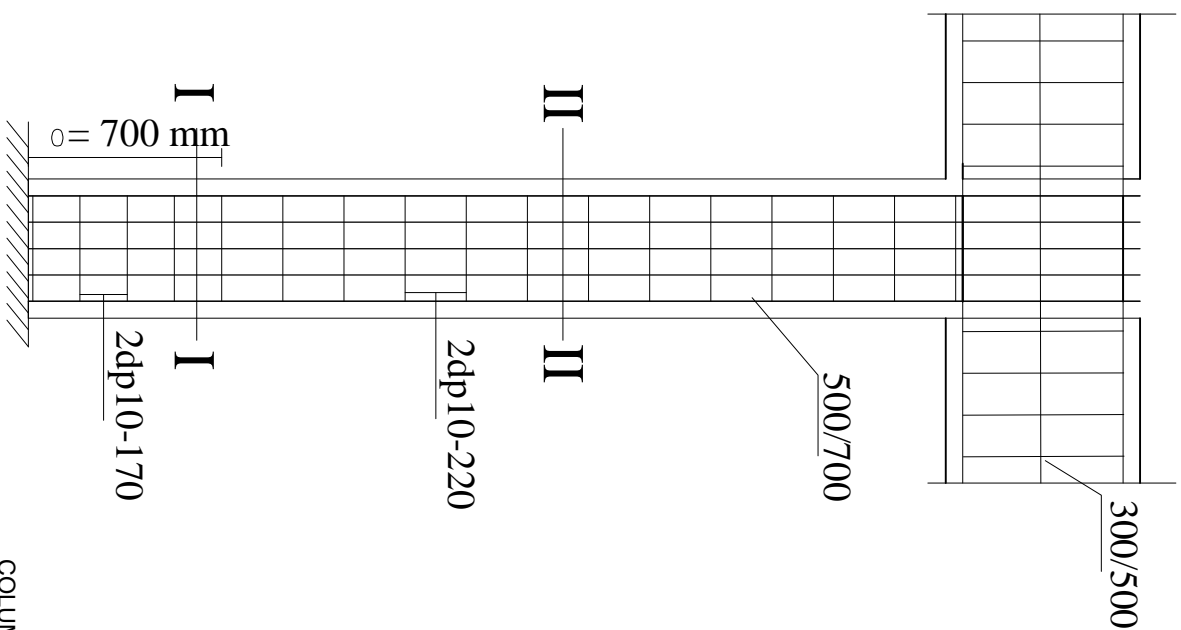
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APPROVED

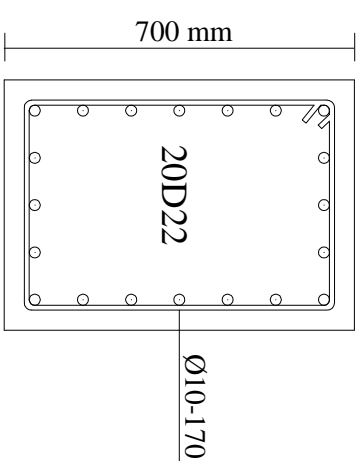
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE SCALE

BEAM DETAIL

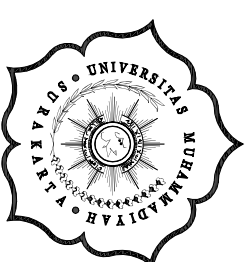


SECTION II-II



SECTION I-I

COLUMN K-157 FRAME AS-4



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE

DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
DETAIL COLUMN	



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

TYPE OF ACTIVITY
6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

REVISION	DATE	SIGNATURE

Drawing by
YUSRON ABDULLATIF RABBANI
D100110029

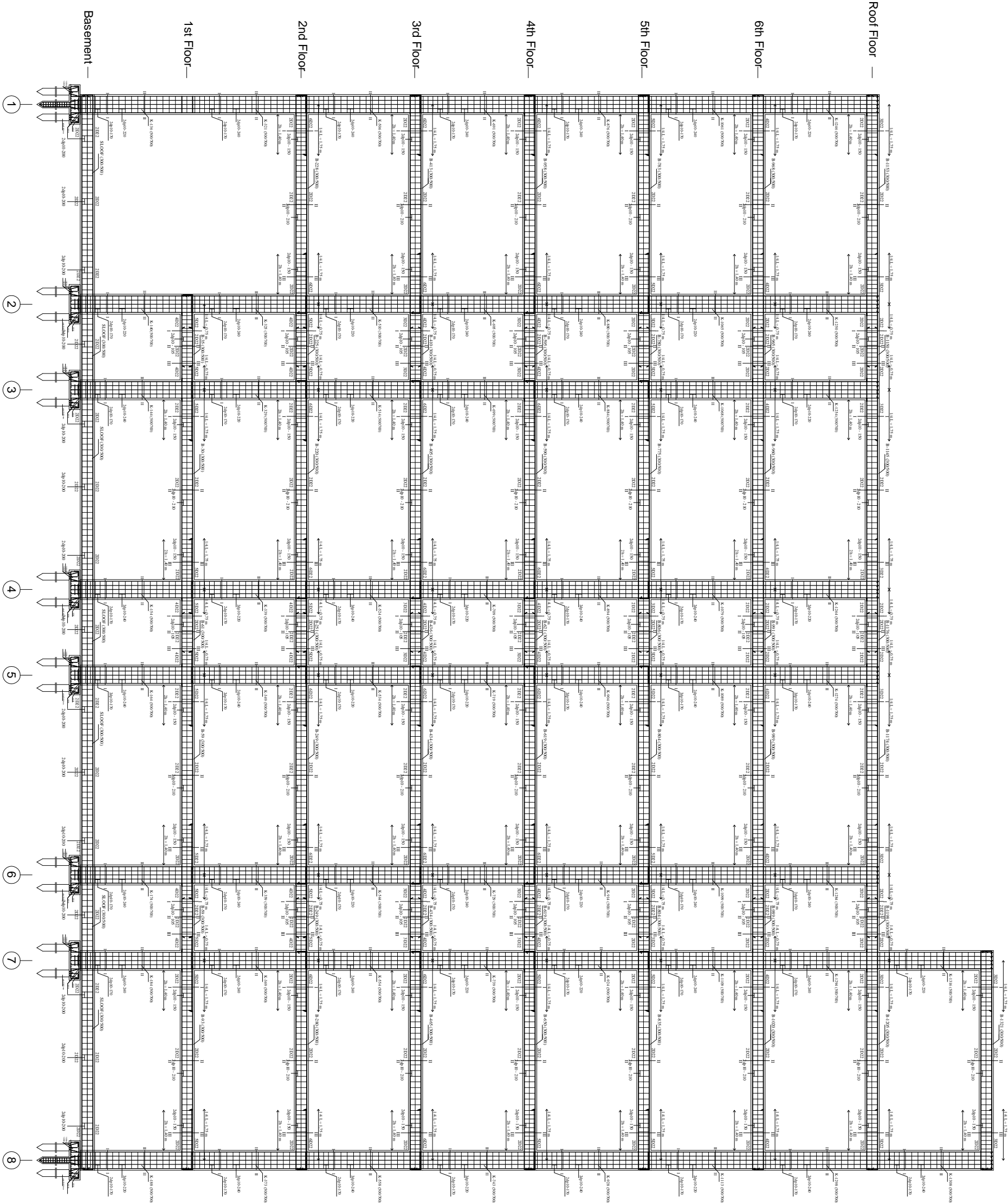
Accepted by

YENNY NURCHASANAH,ST.MT.

Accepted by

BUDI SETIAWAN, S.T., M.T.

TITLE	SCALE
FRAME REINFORCEMENT AS-E	





UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR,2ND FLOOR,
1,2,3 AS-E



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANA,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR,2ND FLOOR,
4,5 AS-E



UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

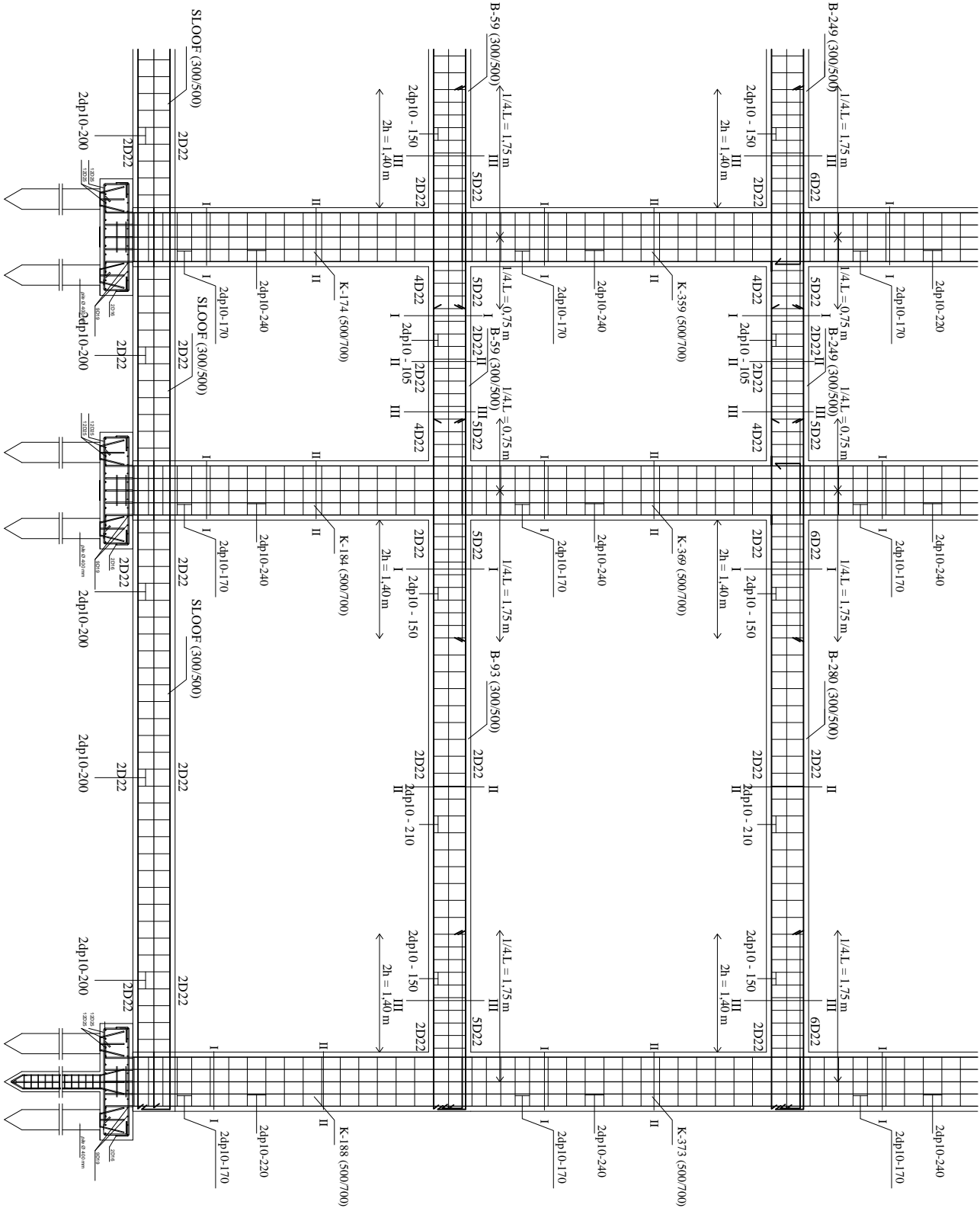
APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR,2ND FLOOR,
6,7,8 AS-E

2nd Floor



1st Floor

Basement

6 7 8



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

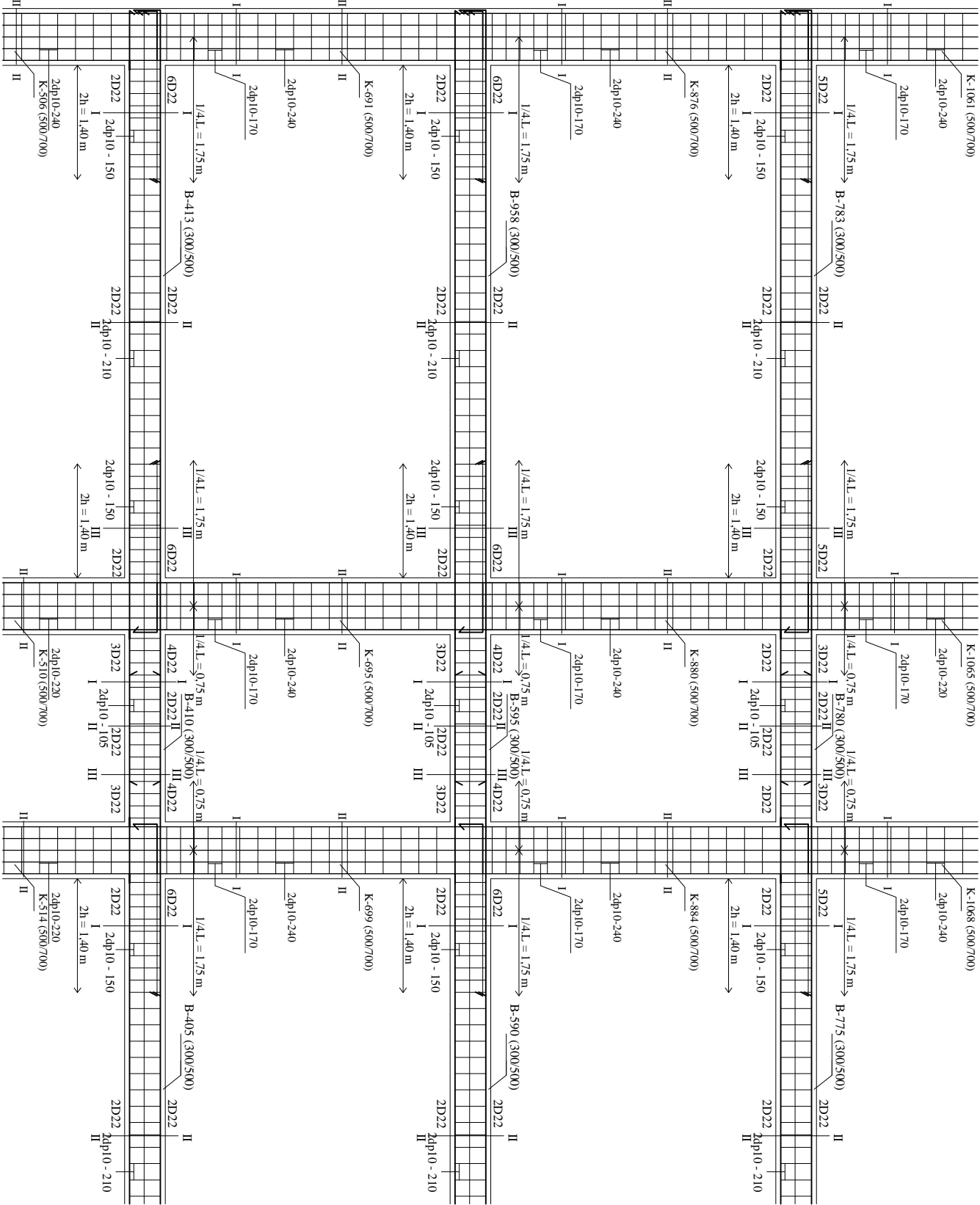
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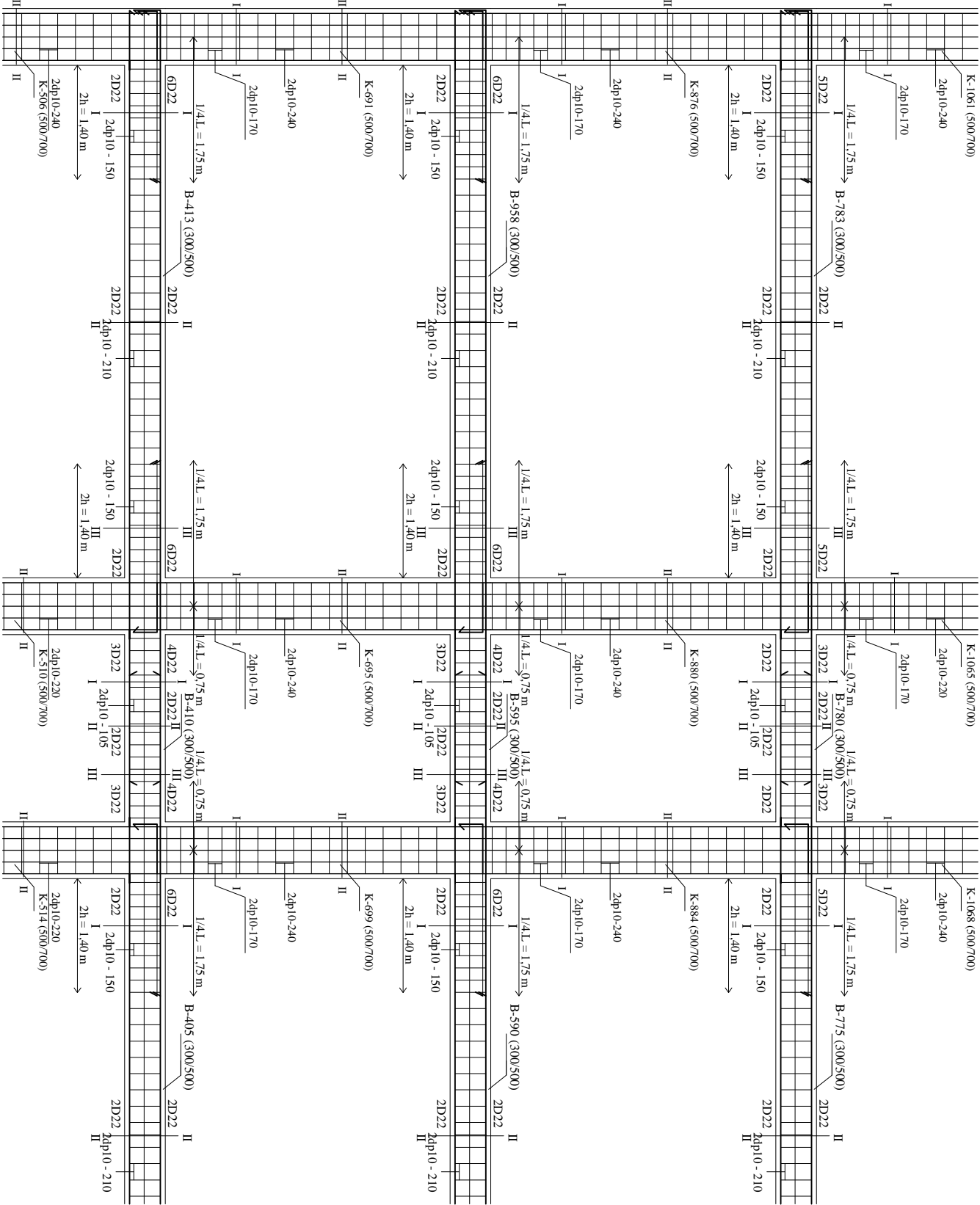
IMAGE TITLE	SCALE
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FRAME FOR 3RD FLOOR,
4TH FLOOR,5TH FLOOR,
1,2,3 AS-E

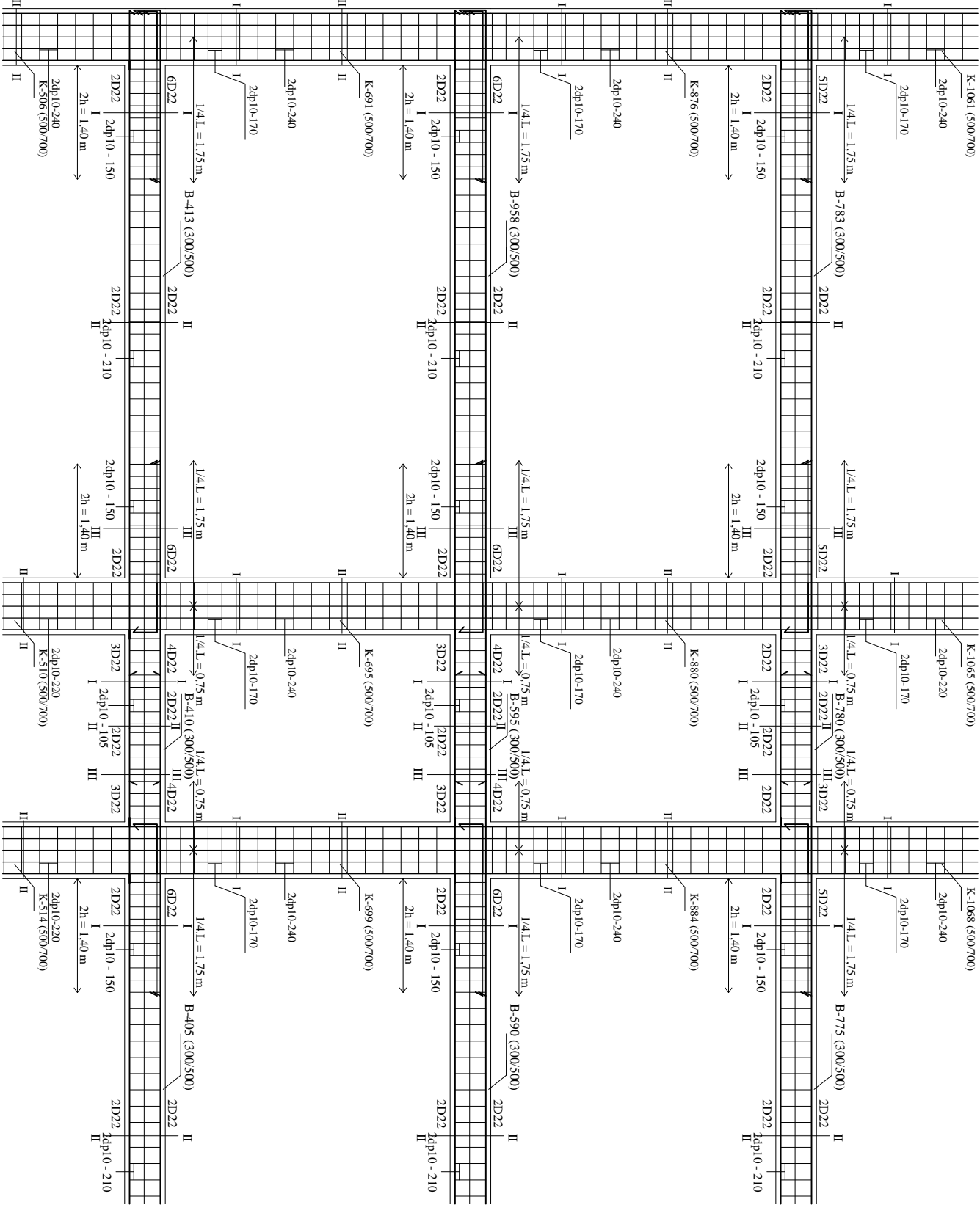
5th Floor



4th Floor



3rd Floor





UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 3RD FLOOR,
4TH FLOOR,5TH FLOOR,
4,5 AS-E



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

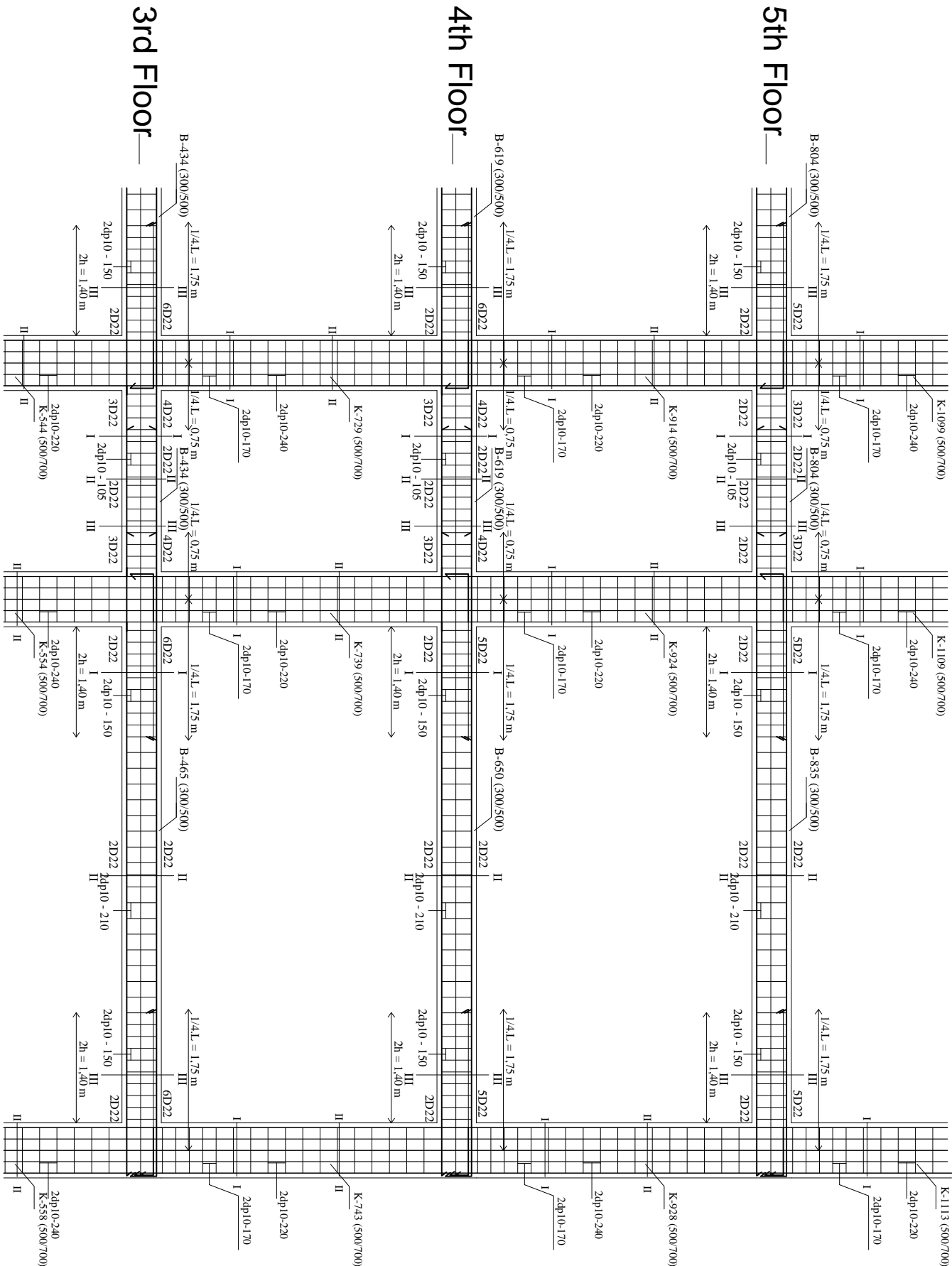
YENNY NURCHASANA,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 3RD FLOOR,
4TH FLOOR,5TH FLOOR,
6,7,8 AS-E



5th Floor

4th Floor

3rd Floor

6

7

8



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

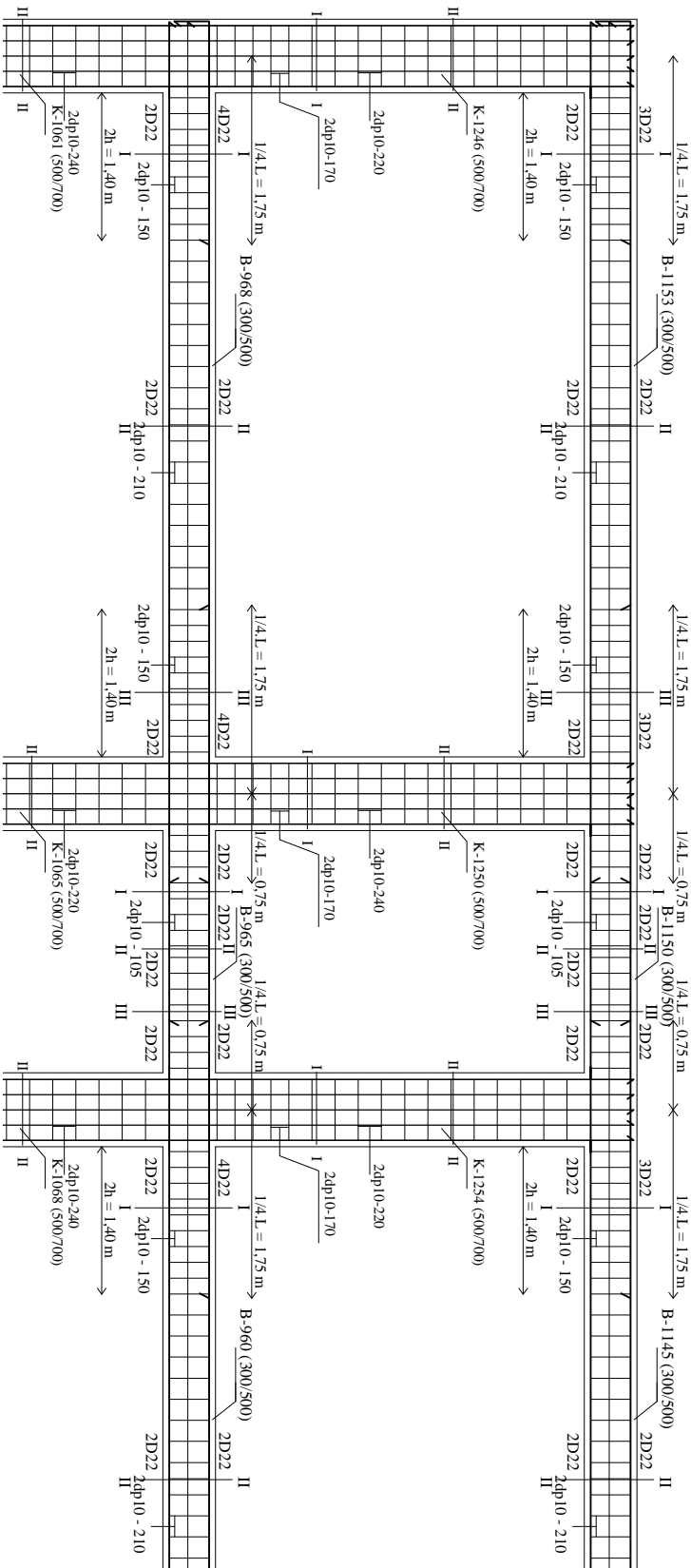
APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 6TH FLOOR,
ROOF FLOOR,1,2,3 AS-E

Roof Floor



6th Floor

1

2

3



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH,ST.,MT.

APPROVED

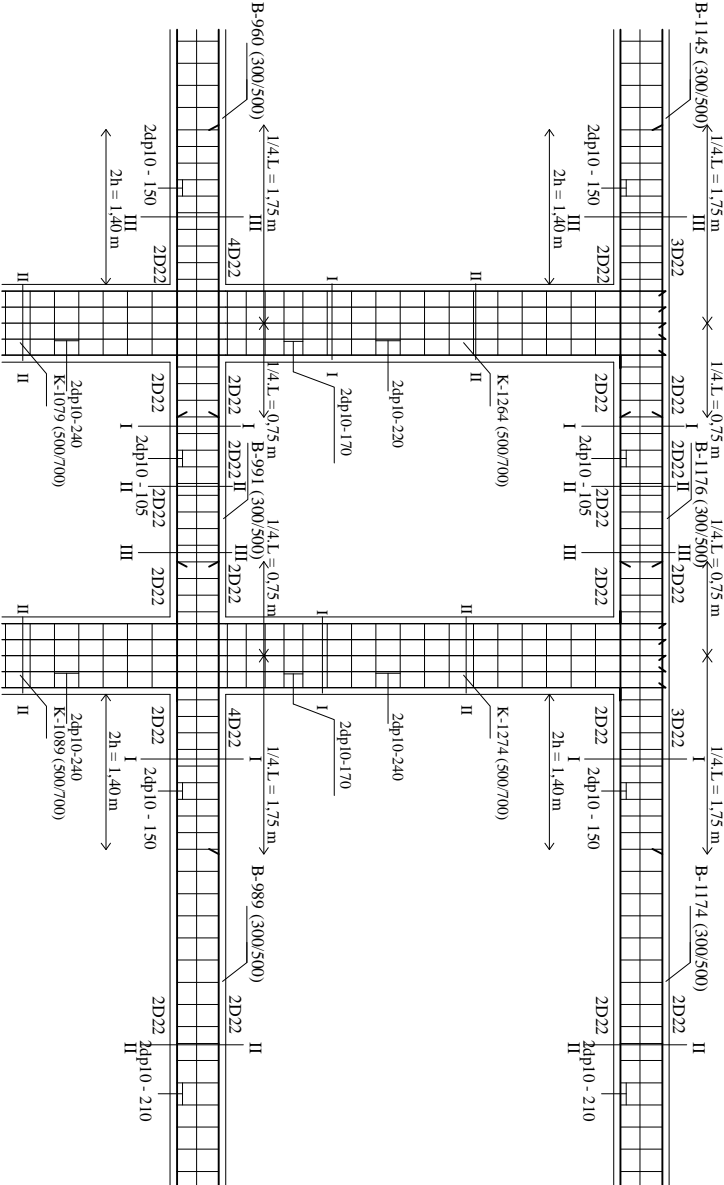
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 6TH FLOOR,
ROOF FLOOR,4,5 AS-E

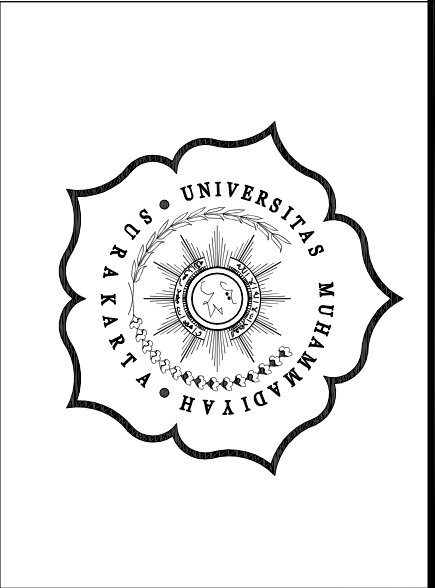
6th Floor

Roof Floor



4

5



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

YENNY NURCHASANAH, ST. MT.

APPROVED

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IMAGE TITLE	SCALE
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FRAME FOR 6TH FLOOR,
ROOF FLOOR,6,7,8 AS-E

9—



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
CIVIL ENGINEERING PROGRAM

TYPE OF ACTIVITY
6 FLOOR AND 1 BASEMENT HOTEL PLANNING
WITH THE INTERMEDIATE REINFORCED
CONCRETE MOMENT FRAMES
IN SURAKARTA

REVISION	DATE	SIGNATURE
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Drawing by

YUSRON ABDULLATIF RABBANI
D100110029

Accepted by

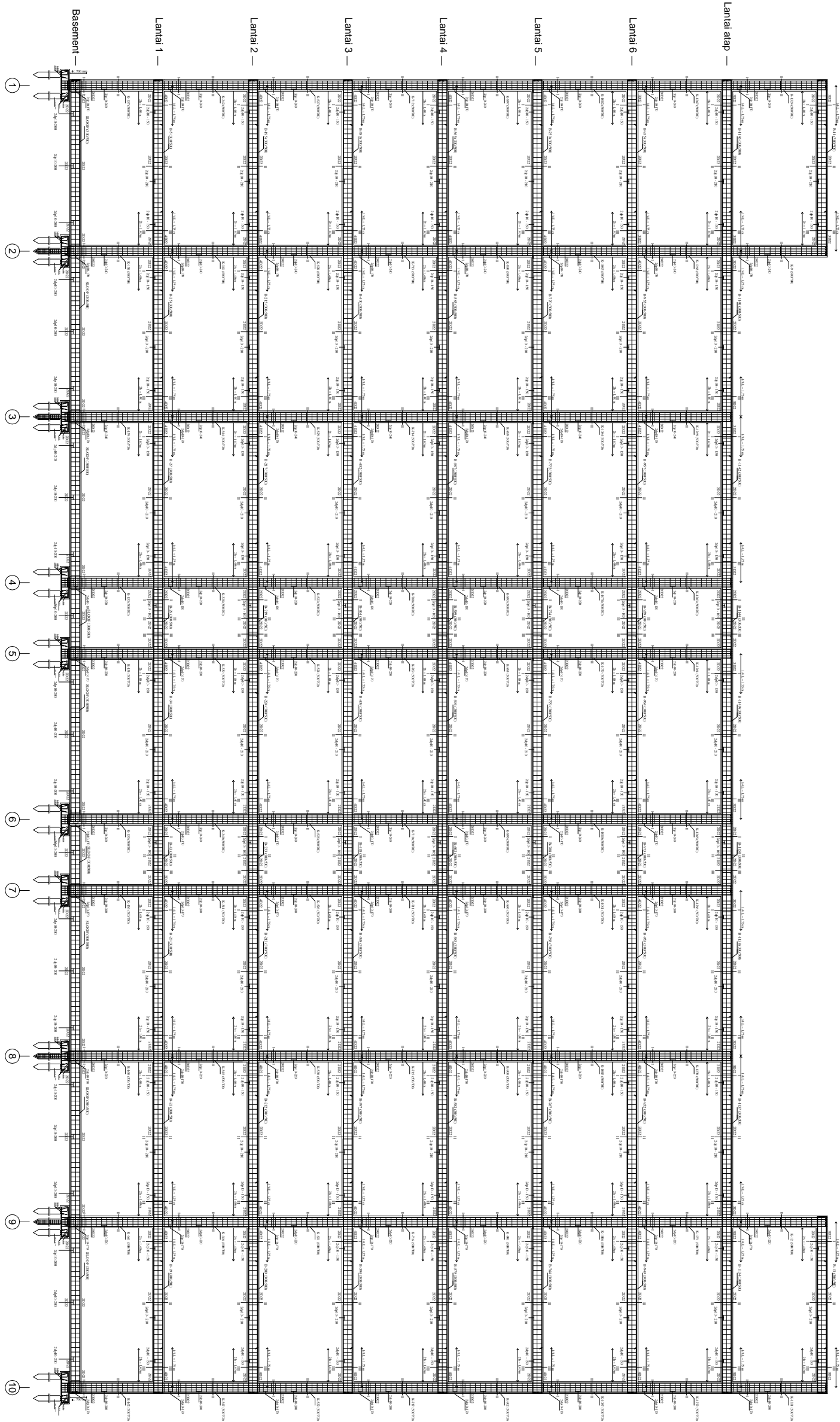
YENNY NURCHASANAH, S.T., M.T.

Accepted by

BUDI SETIAWAN, S.T., M.T.

TITLE	SCALE
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FRAME REINFORCEMENT AS-4





UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

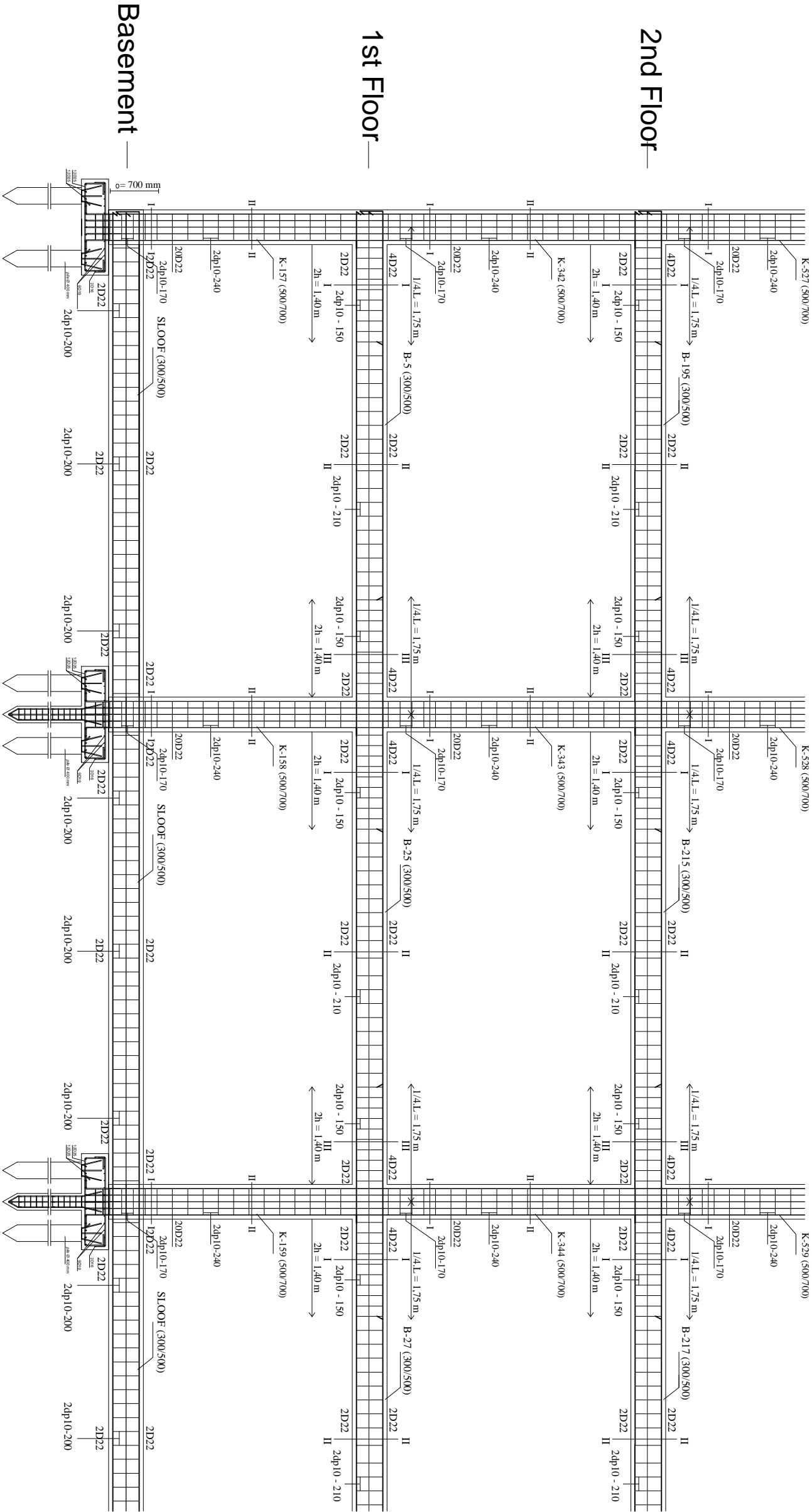
YENNY NURCHASANAH,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR,2ND FLOOR,
1,2,3 AS-4



2nd Floor

1st Floor

Basement

1

2

3



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

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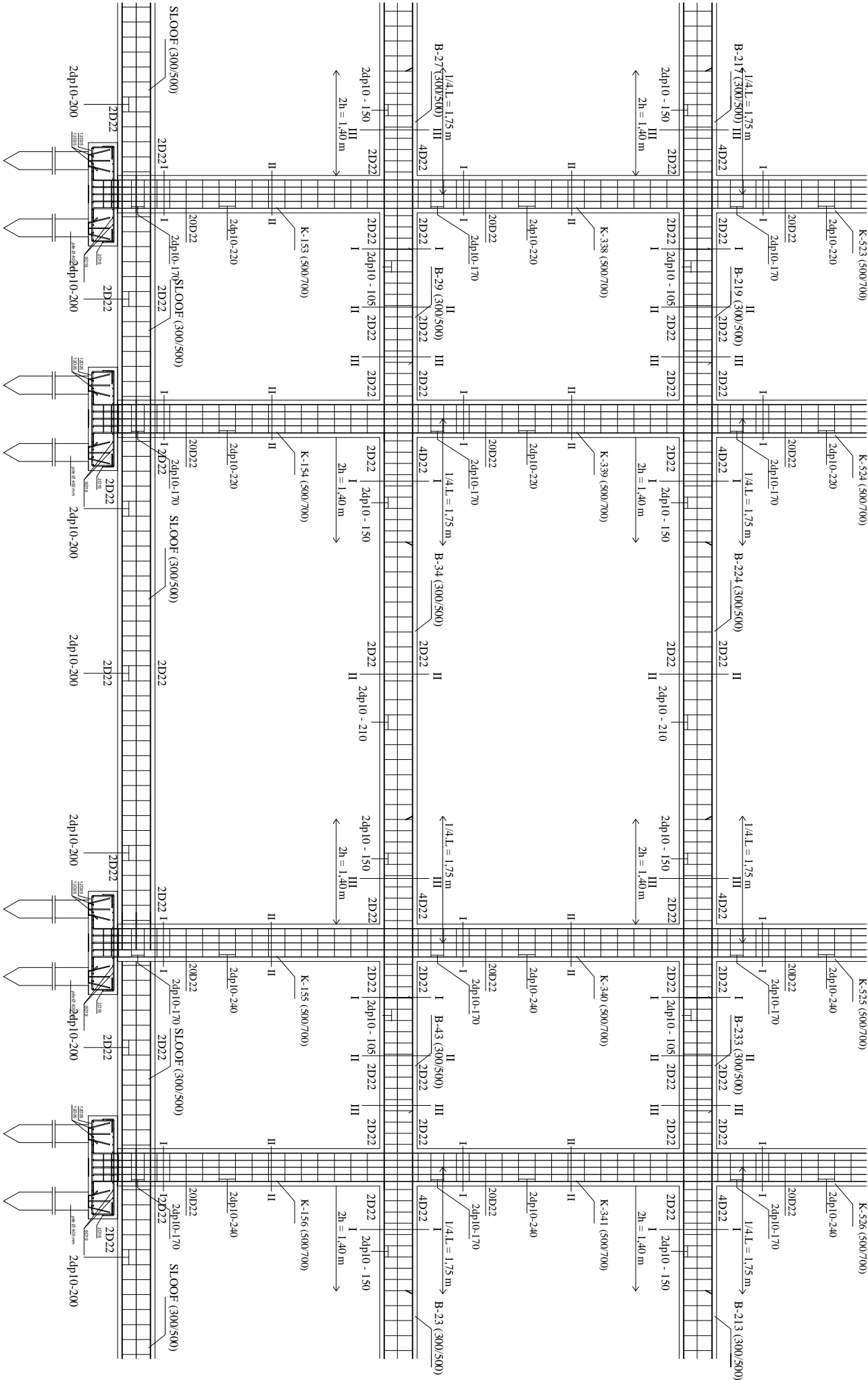
YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR, 2ND FLOOR,
1, 2, 3 AS-4



2nd Floor

1st Floor

Basement



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

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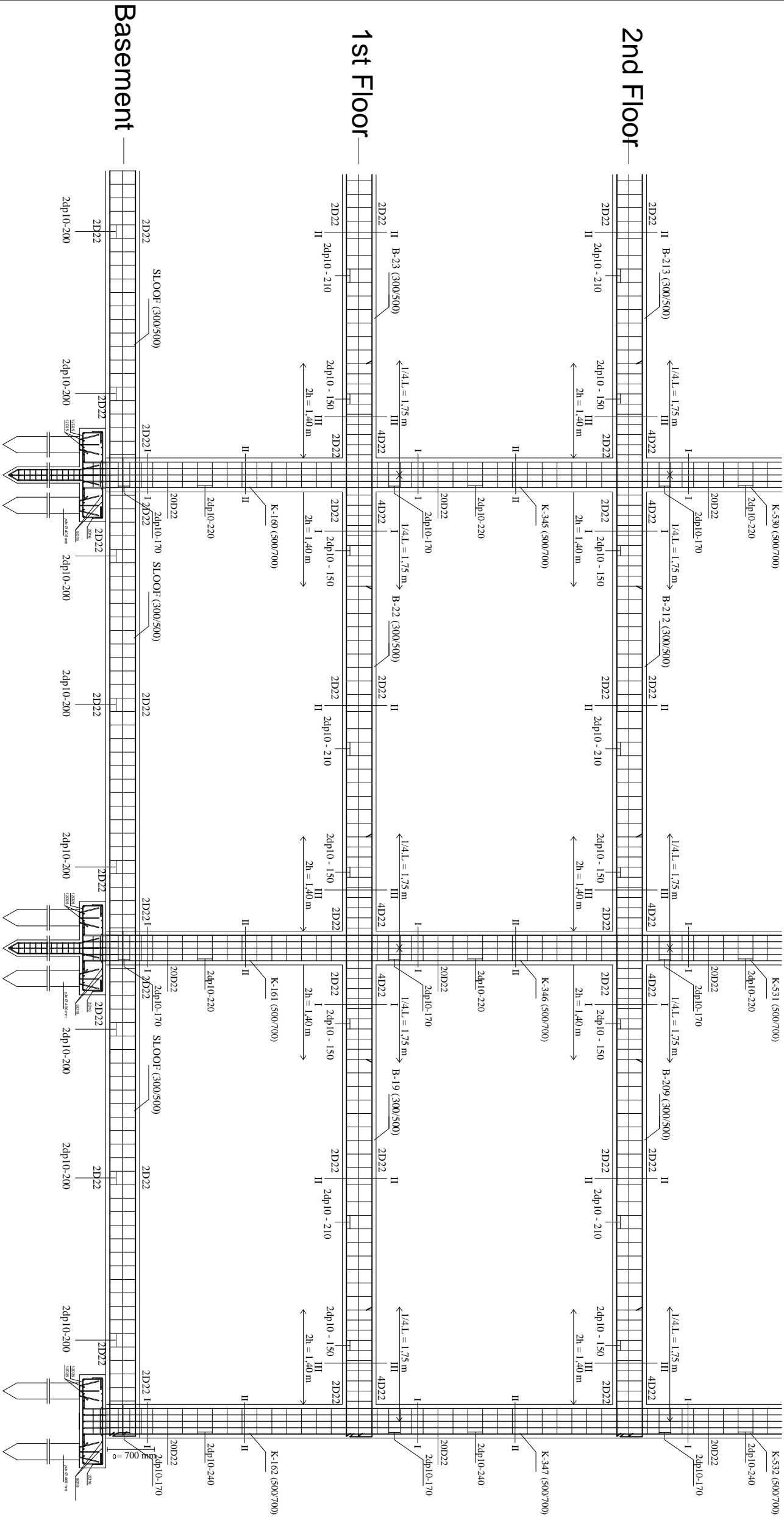
YENNY NURCHASANAH,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR BASEMENT FLOOR,
1ST FLOOR,2ND FLOOR,
1,2,3 AS-4



2nd Floor

1st Floor

Basement



UNIVERSITAS MUHAMMADIYAH
SURAKARTA

ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

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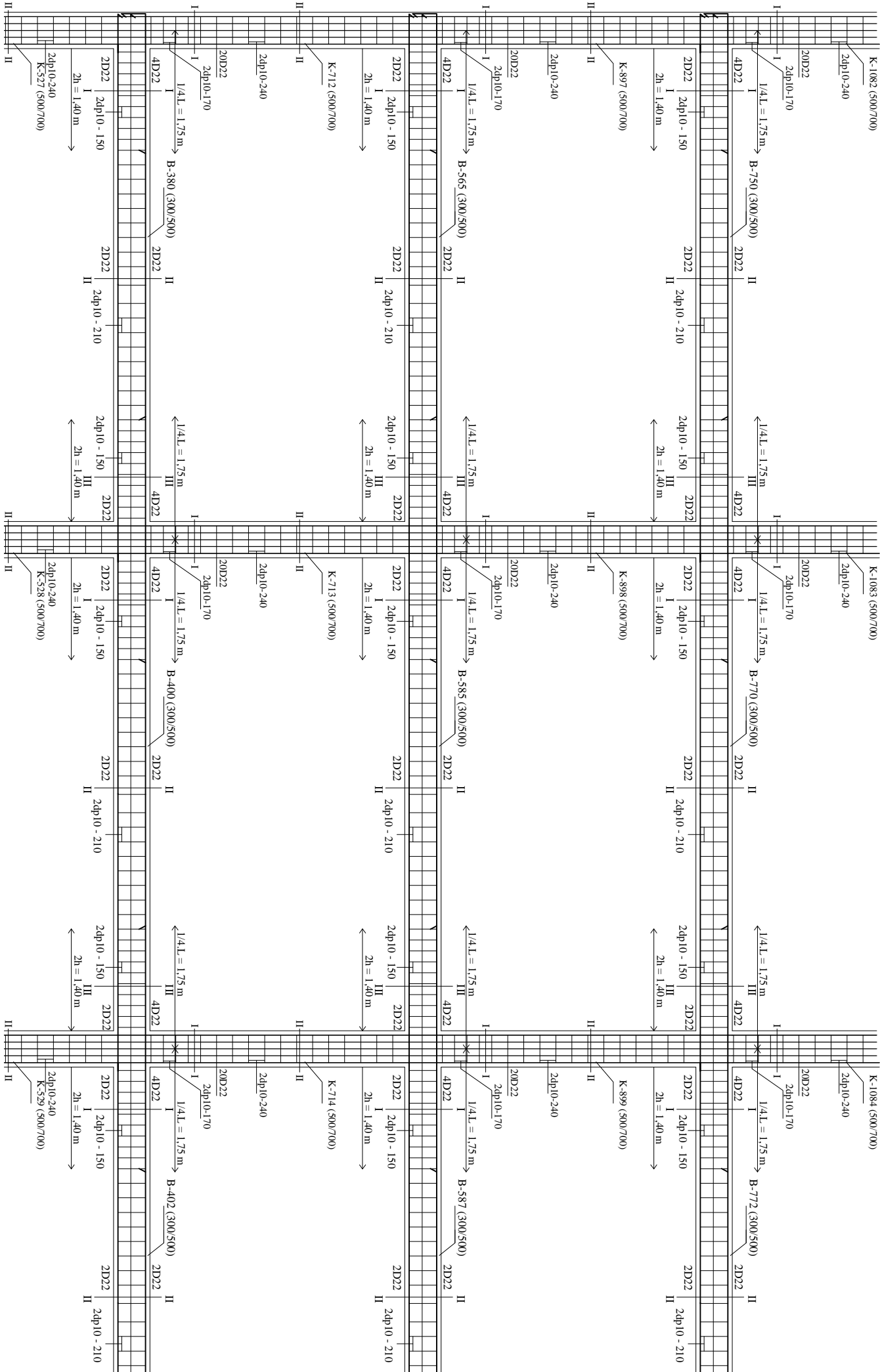
YENNY NURCHASANAHT,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 3RD FLOOR,
4TH FLOOR,5TH FLOOR,
1,2,3 AS-E



5th Floor

4th Floor

3rd Floor

1

2

3



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

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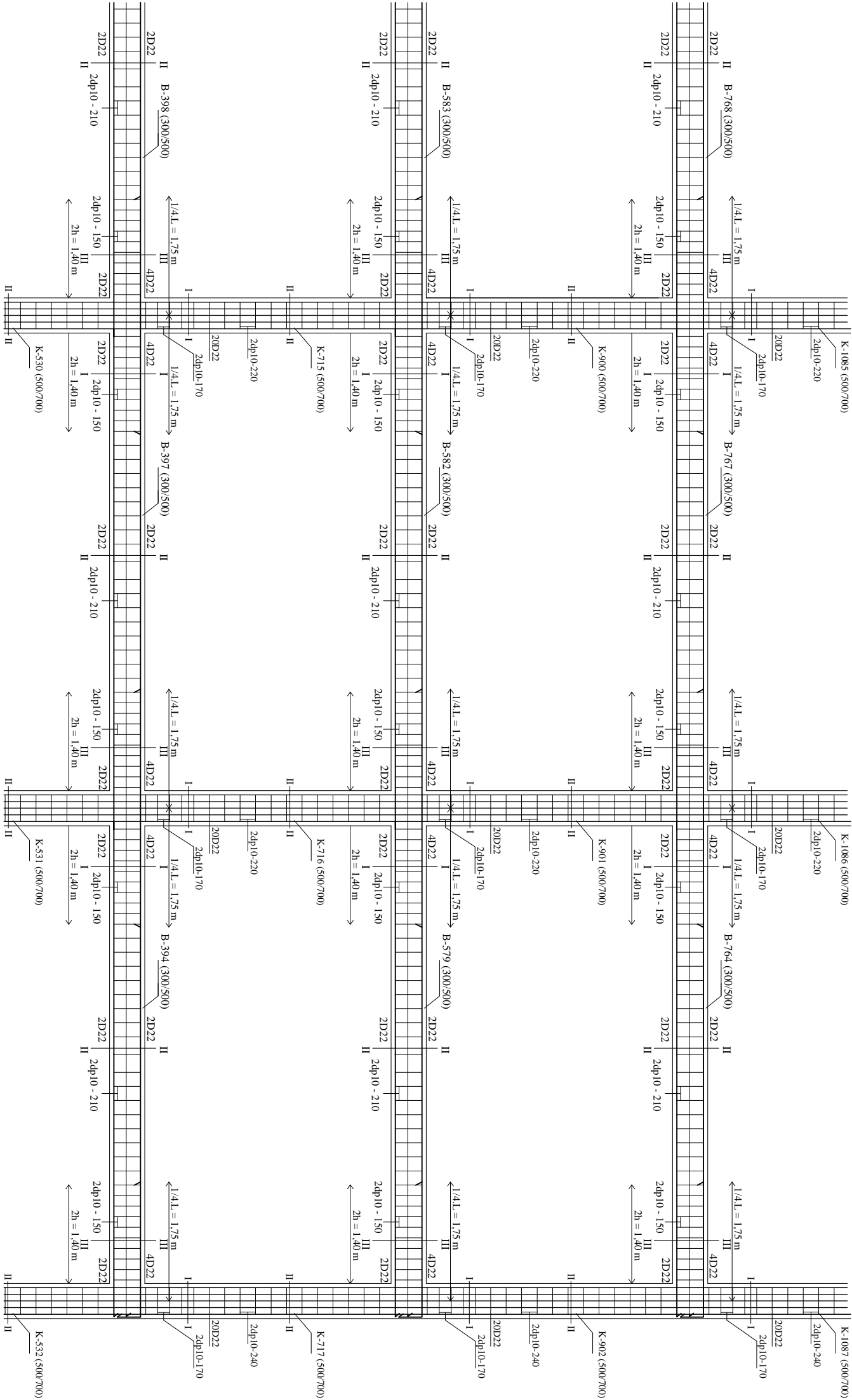
YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 3RD FLOOR,
4TH FLOOR, 5TH FLOOR,
18, 9, 10 AS-E



5th Floor

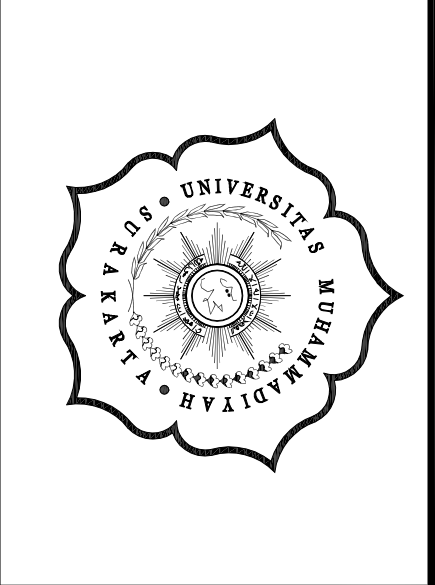
4th Floor

3rd Floor

8

9

10



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

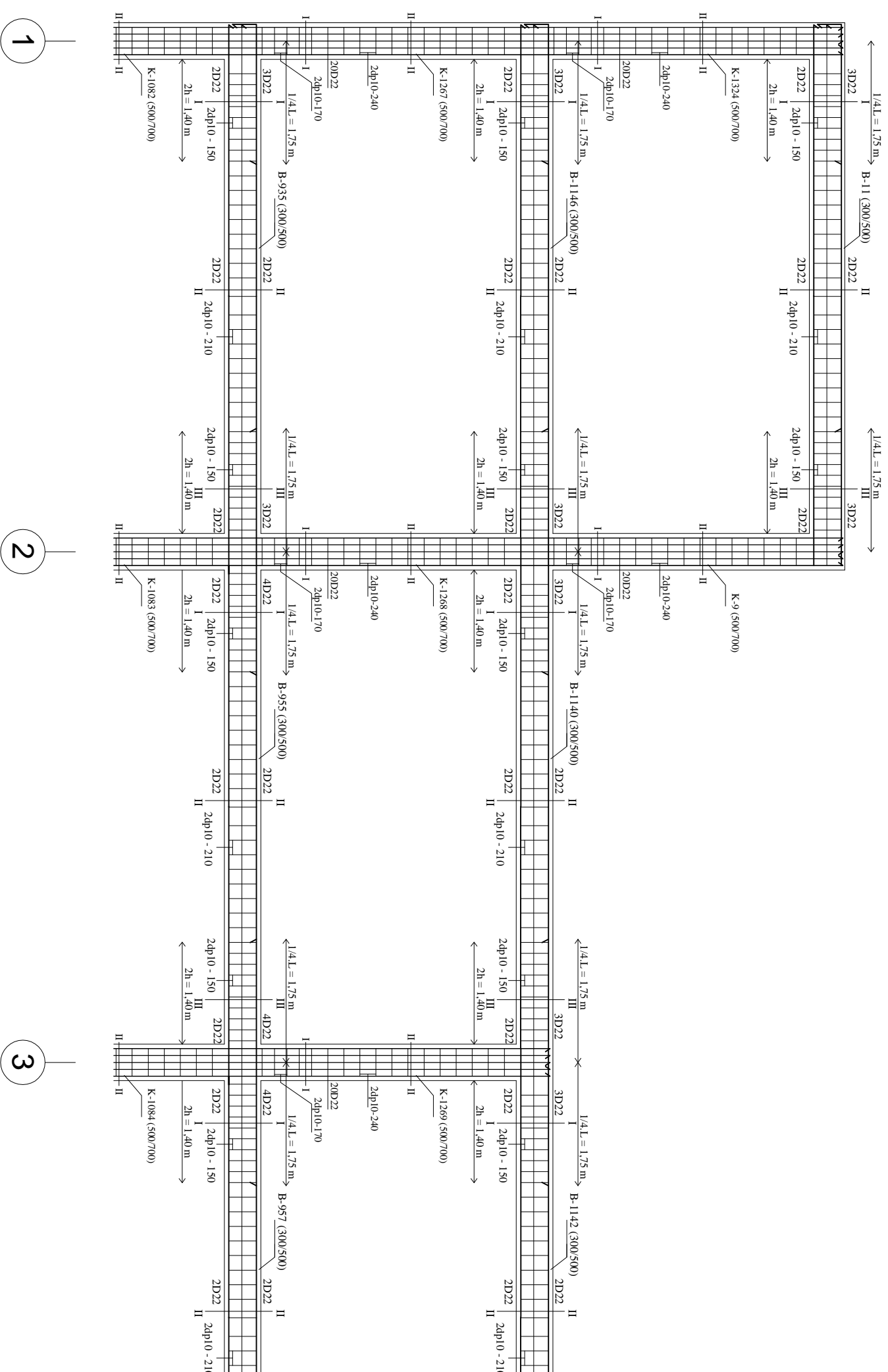
APPROVED

YENNY NURCHASANAH, ST., MT.

APPROVED

IMAGE TITLE	SCALE
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FRAME FOR 6TH FLOOR,
ROOF FLOOR, 1,2,3 AS-E



1

1



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

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YENNY NURCHASANA,ST.,MT.

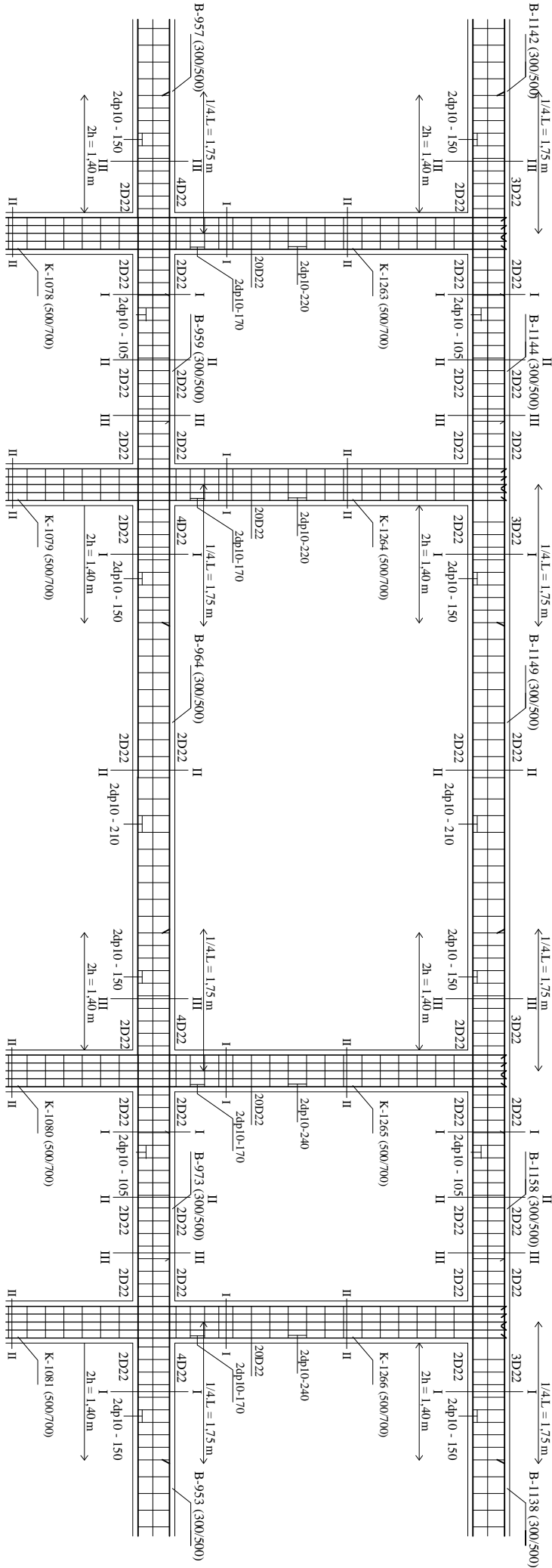
APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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FRAME FOR 6TH FLOOR,
ROOF FLOOR,4,5,6,7 AS-E

Roof Floor



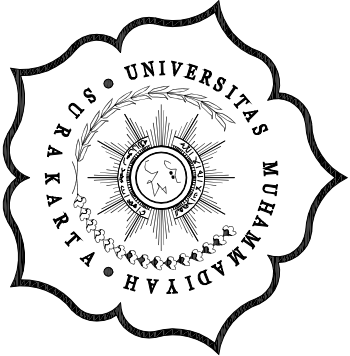
6th Floor

4

5

6

7



UNIVERSITAS MUHAMMADIYAH
SURAKARTA
ENGINEERING FACULTY
STUDY PROGRAM CIVIL ENGINEERING

TYPE OF ACTIVITY

6 FLOOR AND 1 BASEMENT
HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI
D100110029

APPROVED

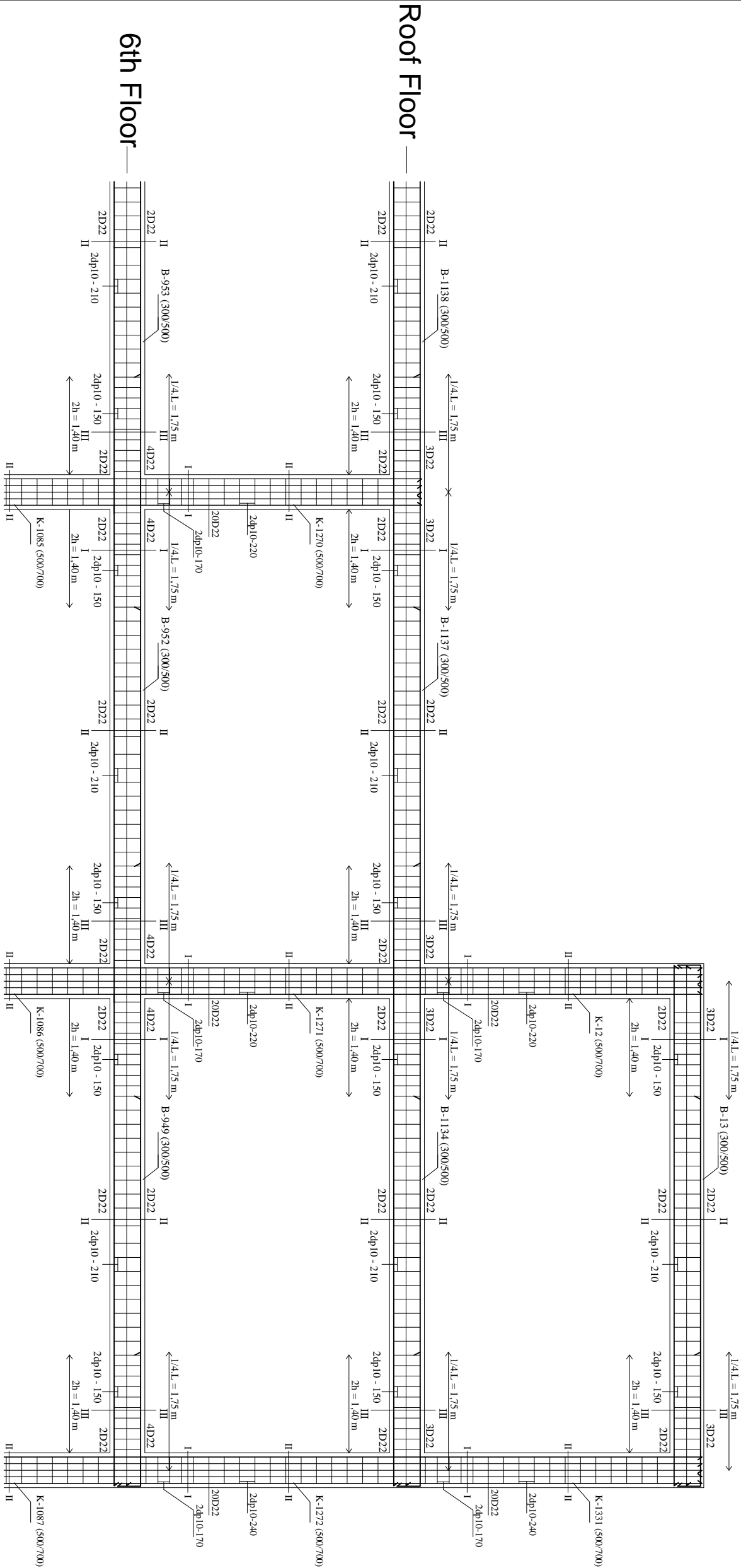
YENNY NURCHASANAH,ST.,MT.

APPROVED

BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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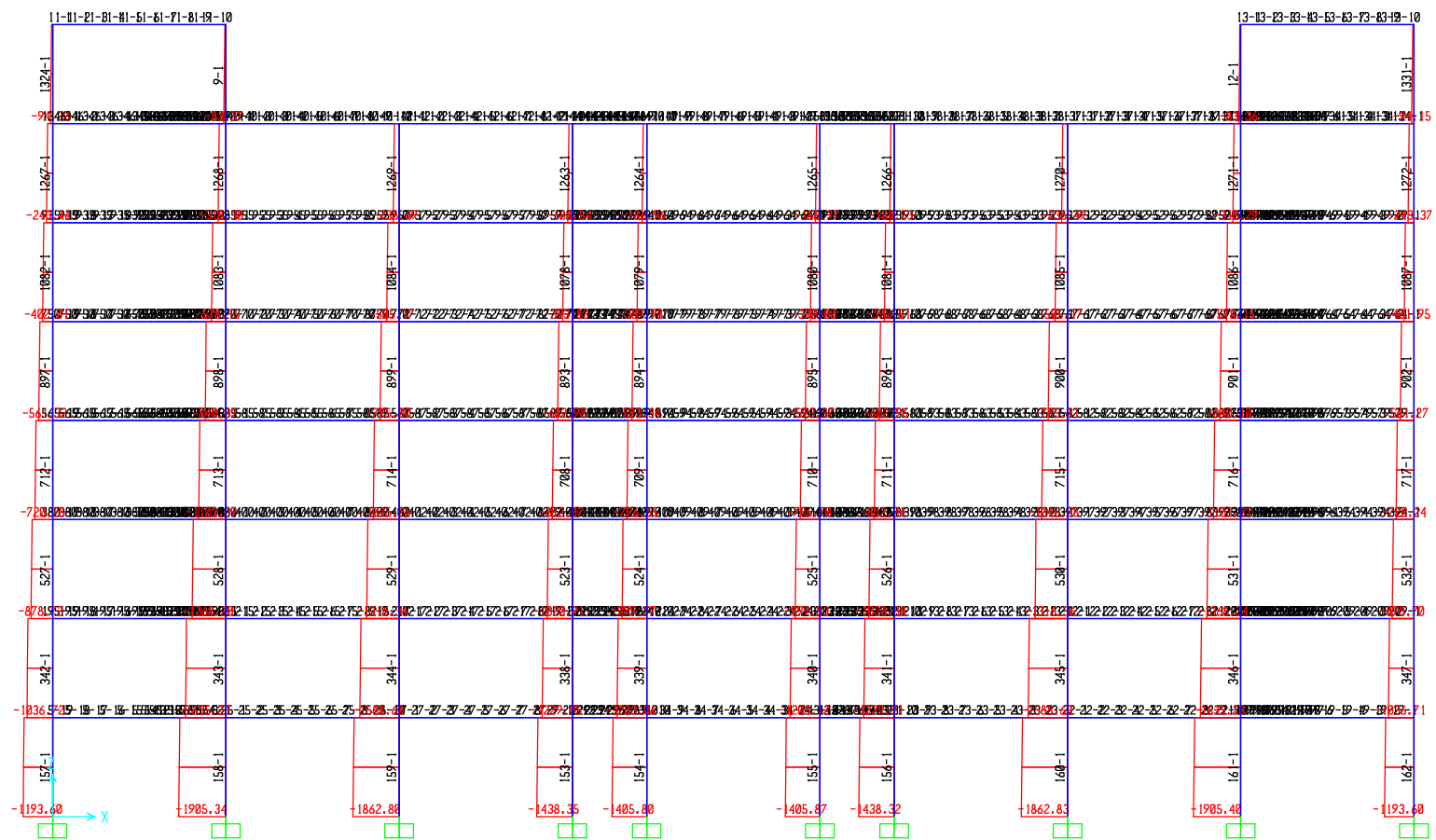
FRAME FOR 6TH FLOOR,
ROOF FLOOR,8,9,10 AS-E

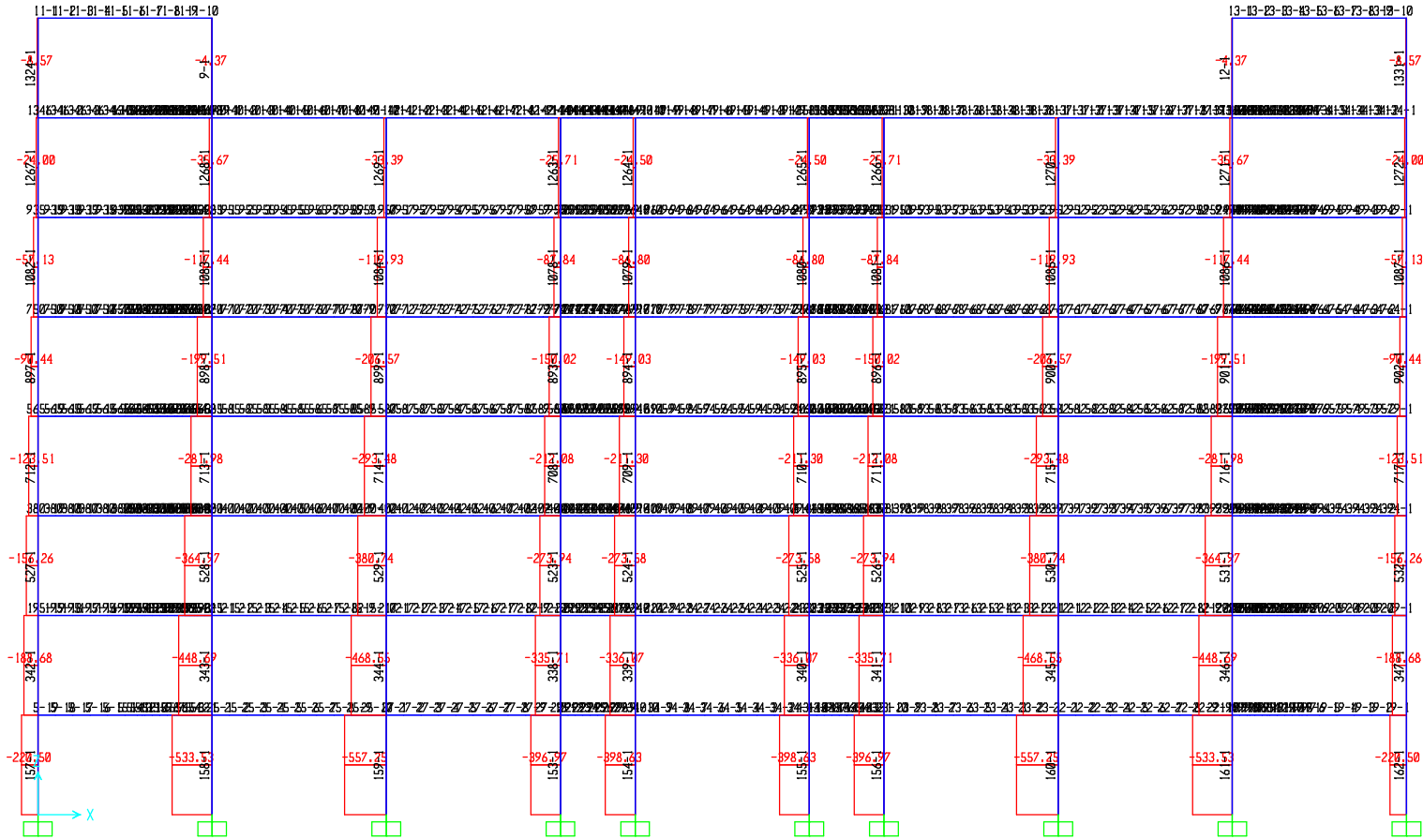


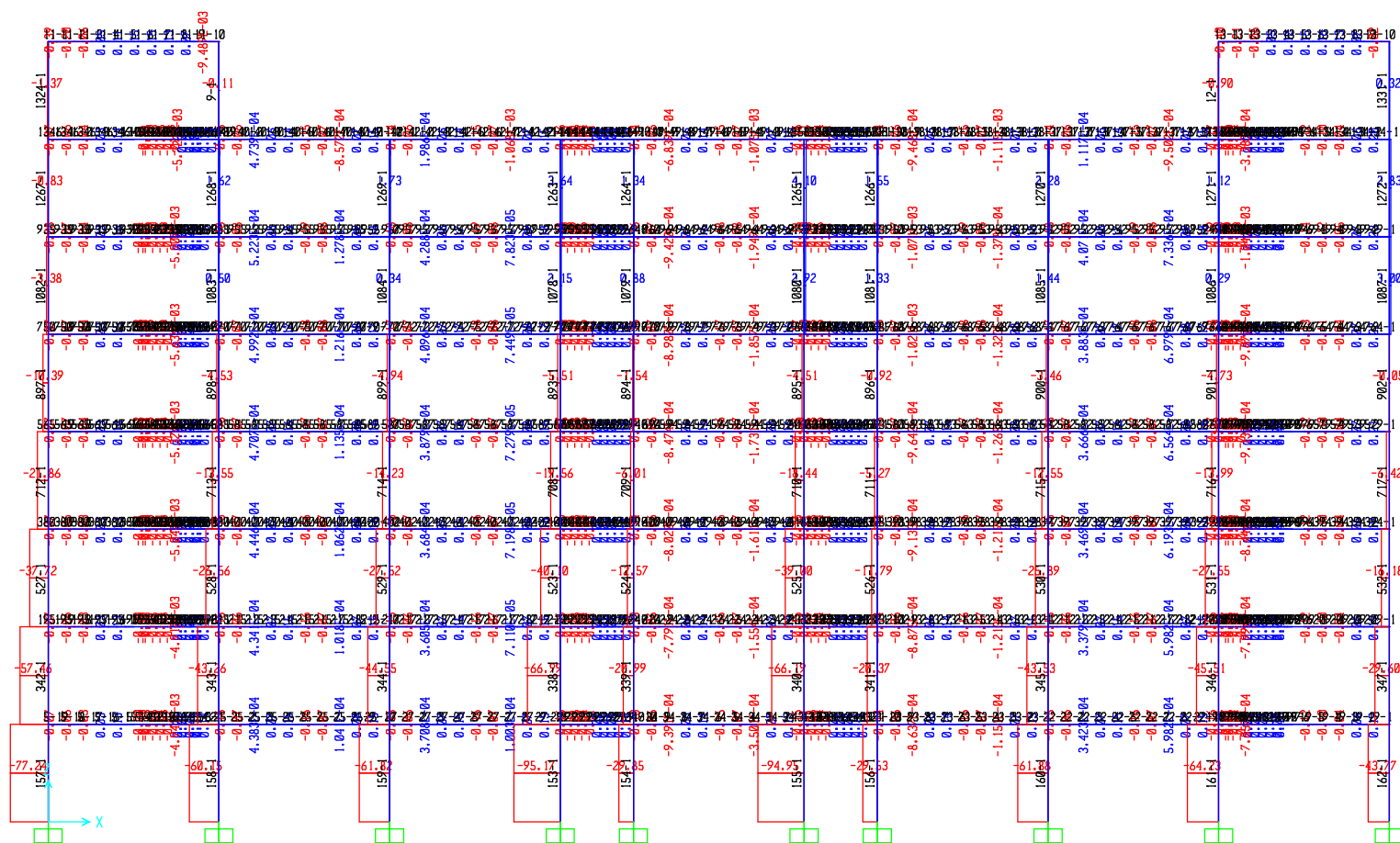
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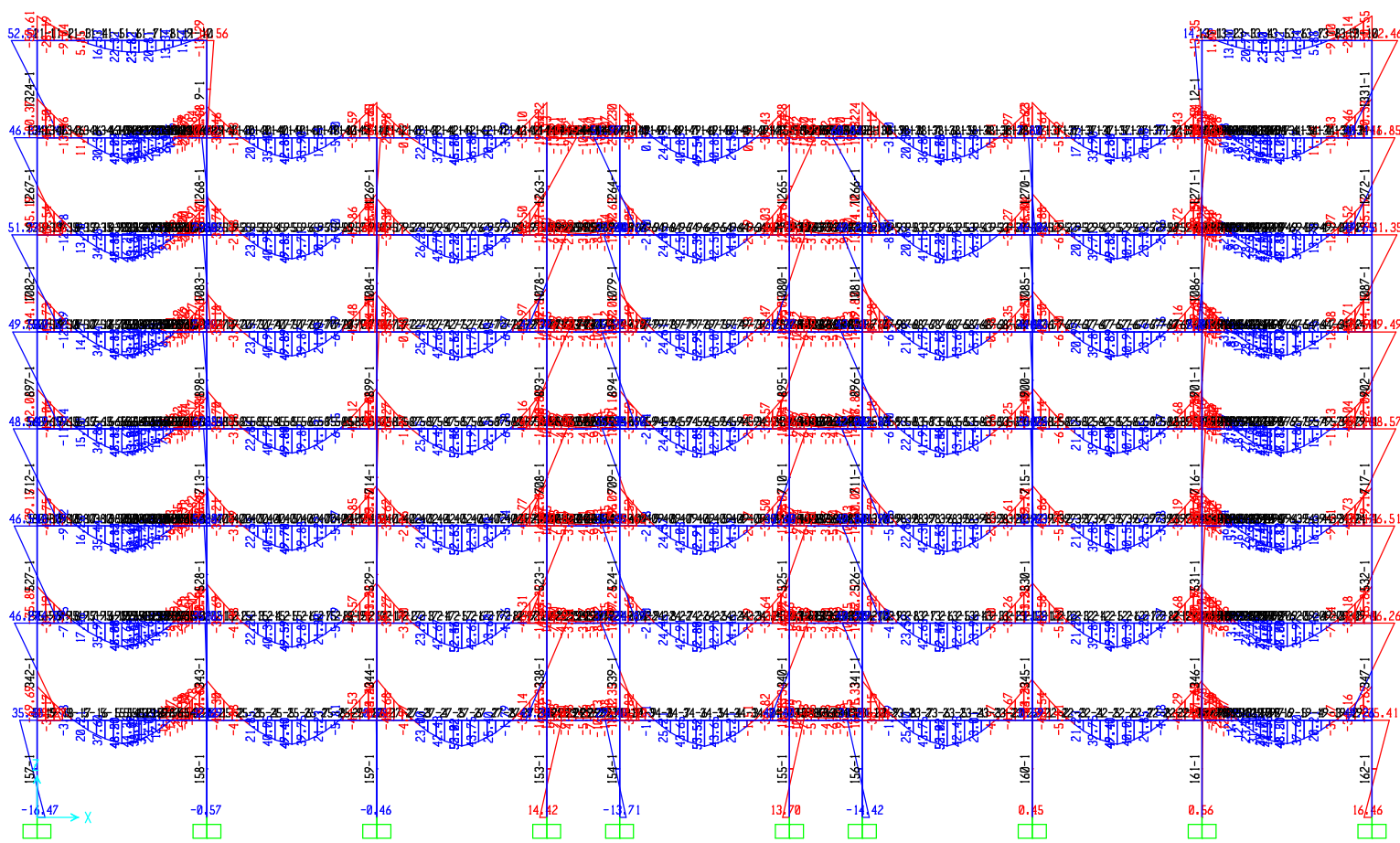
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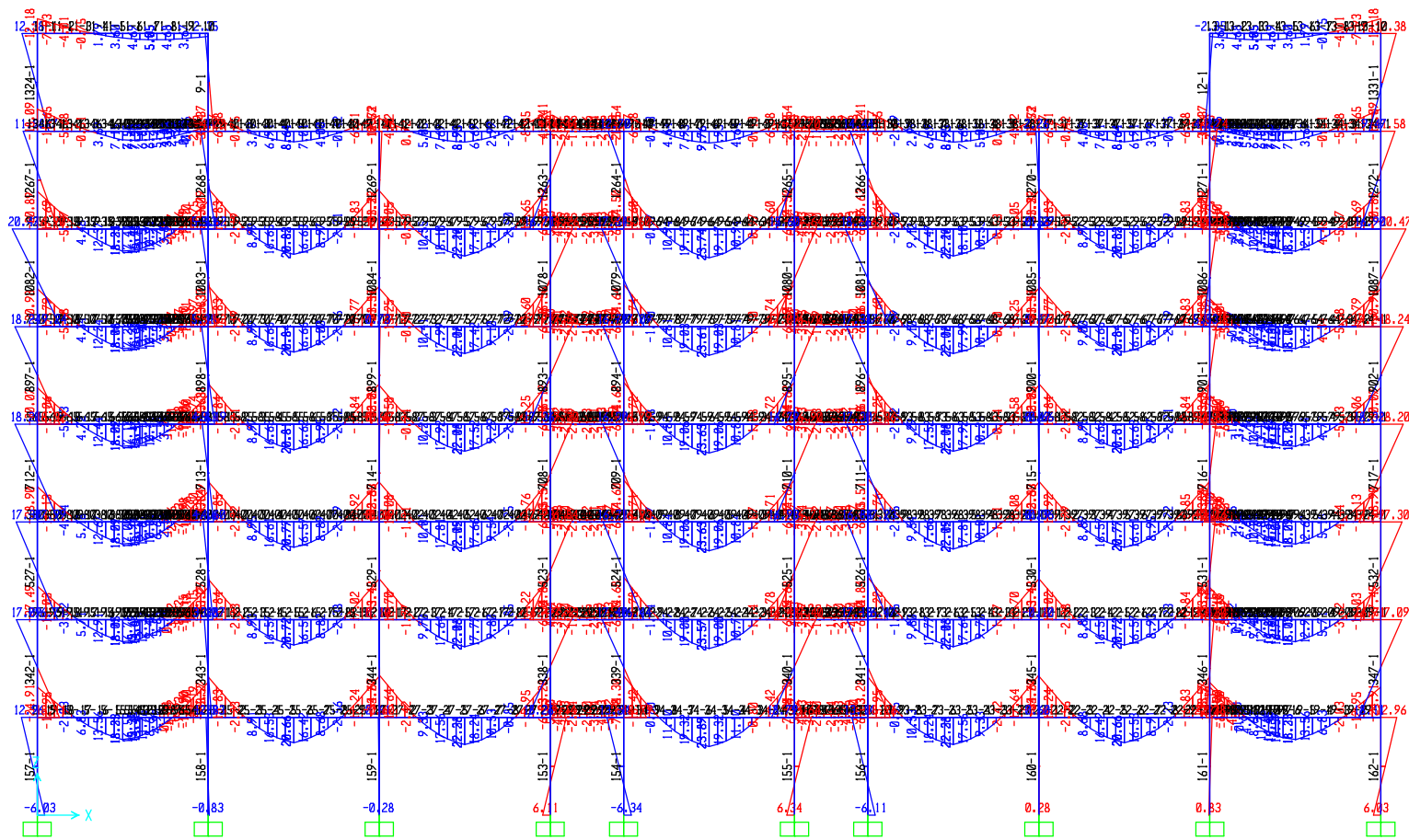
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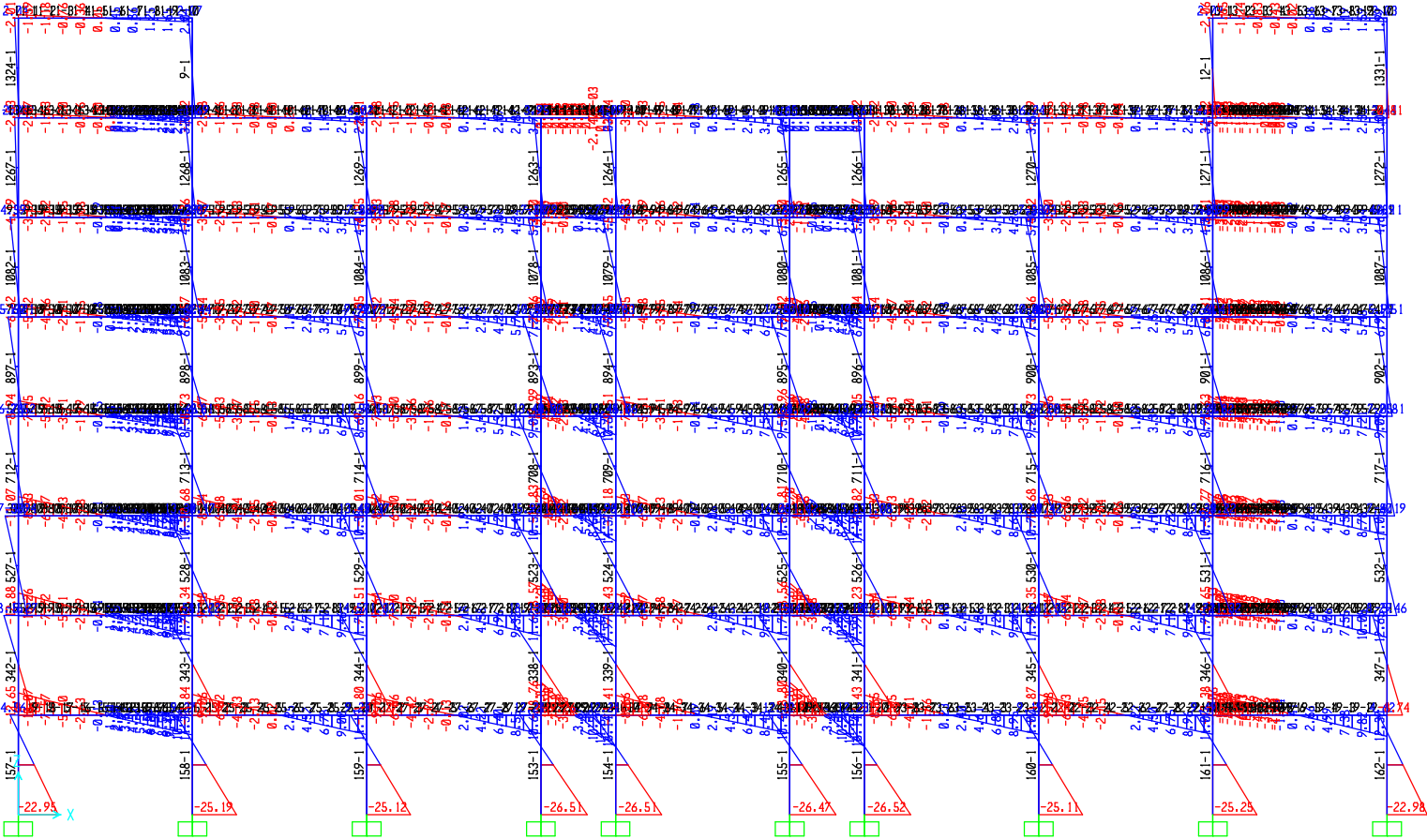


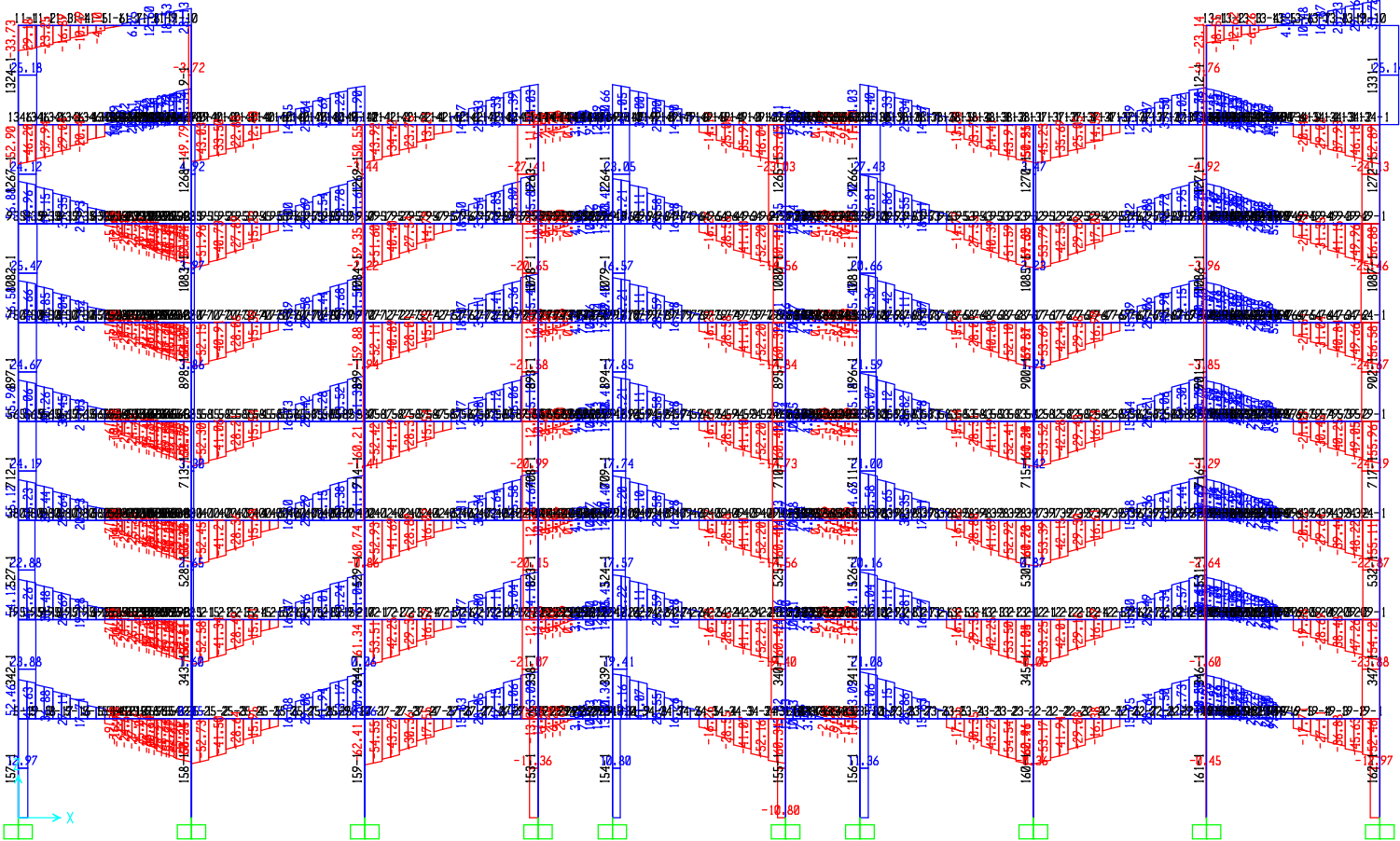


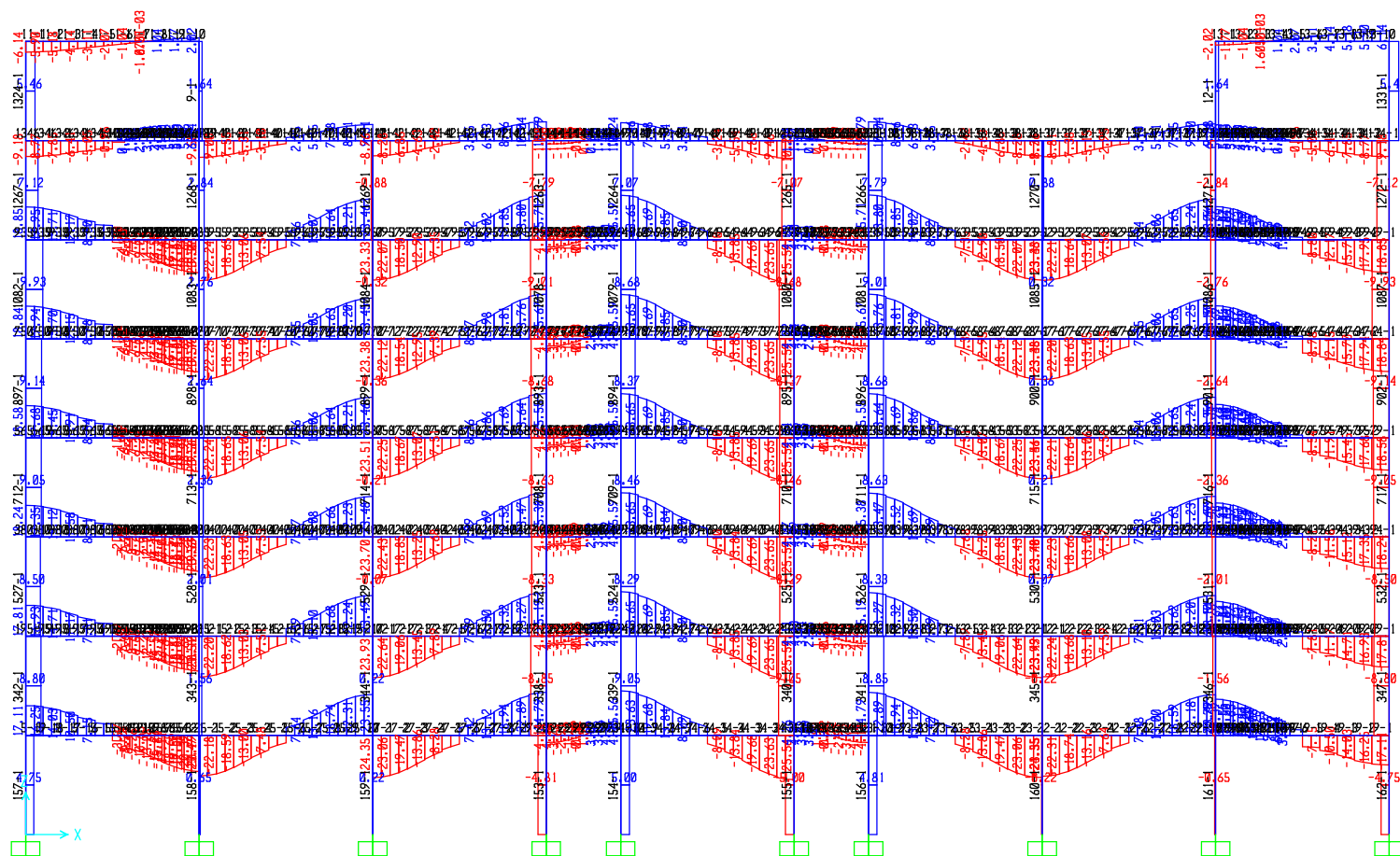


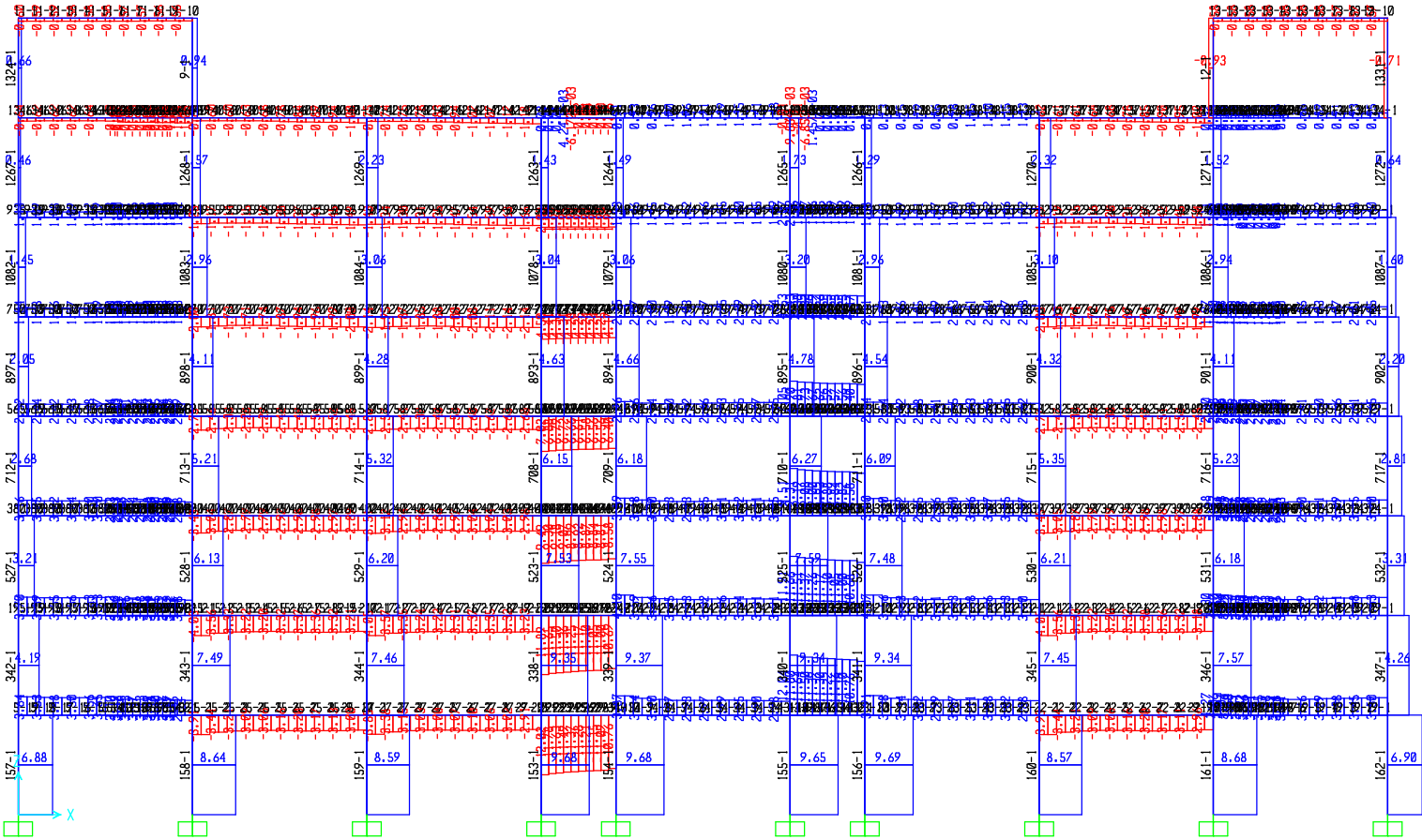


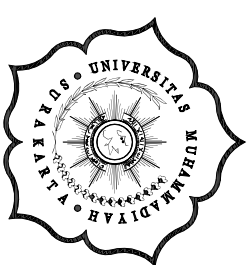












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SURAKARTA
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STUDY PROGRAM CIVIL ENGINEERING

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HOTEL PLANNING

REVISION	DATE	SIGNATURE
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DRAWER

YUSRON ABDULLATIF RABBANI

D100110029

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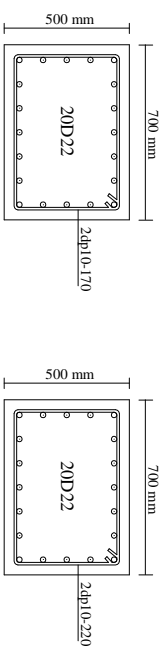
YENNY NURCHASANAH, S.T., M.T.

APPROVED

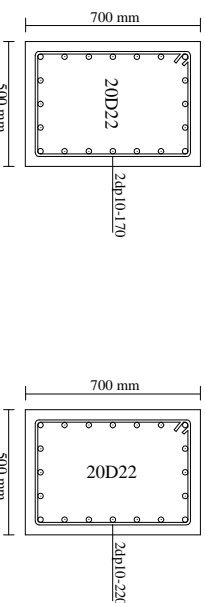
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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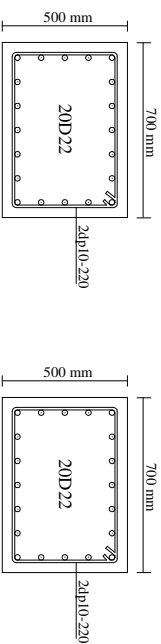
DETAIL COLUMN
AS-E AND AS-4



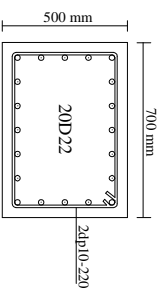
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SCALE 1:20



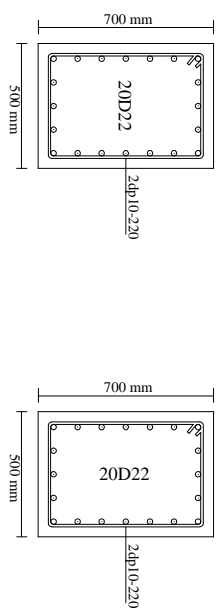
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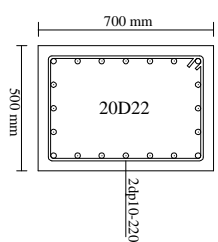
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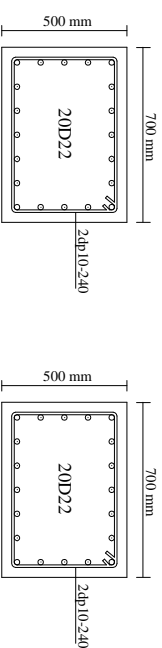
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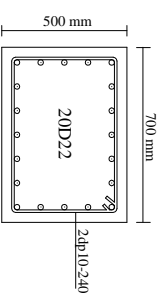
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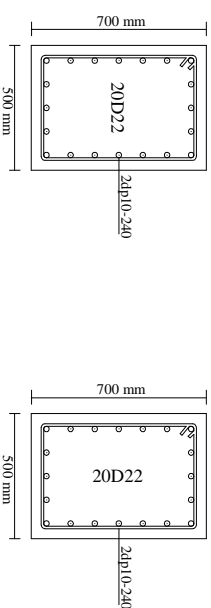
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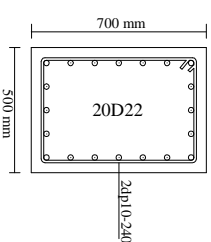
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SECTION COLUMN DETAIL
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K-709 K-719 K-729 K-739 K-884 K-894 K-914
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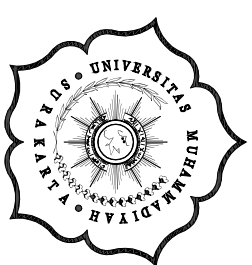
SECTION II-II



SECTION I-I
SECTION COLUMN DETAIL
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K-344 K-347 K-525 K-526 K-527 K-528 K-529 K-532 K-710 K-711
K-712 K-713 K-714 K-161 K-895 K-896 K-897 K-898 K-899 K-902
K-1080 K-1081 K-1082 K-1083 K-1084 K-1087 K-1265 K-1266
K-1267 K-1268 K-1269 K-1272 K-1324 K-1331 AS-4
SCALE 1:20



SECTION II-II



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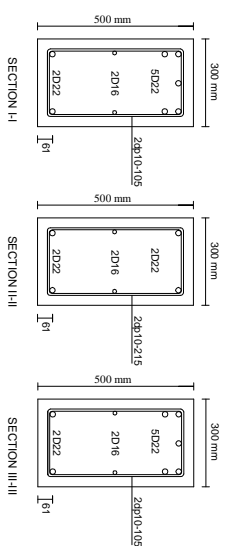
YENNY NURCHASANAH,S.T.,M.T.

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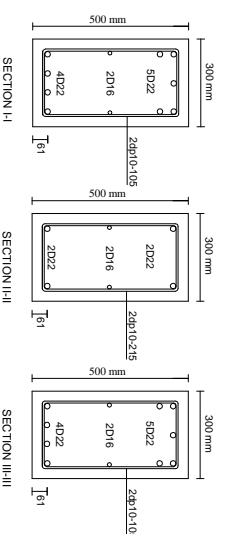
BUDI SETIAWAN, S.T., M.T.

IMAGE TITLE	SCALE
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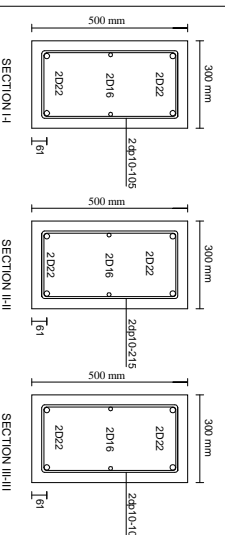
DETAIL BEAM AS-E	
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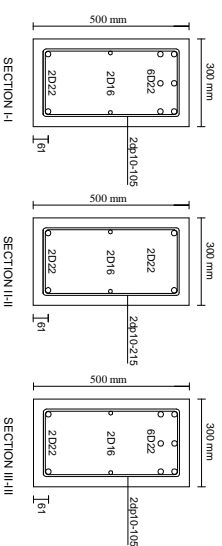
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SCALE 1:20



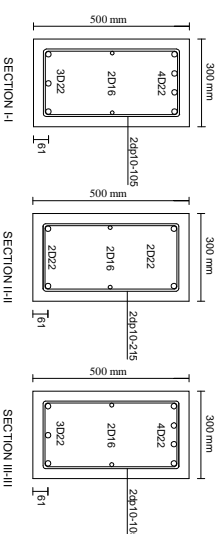
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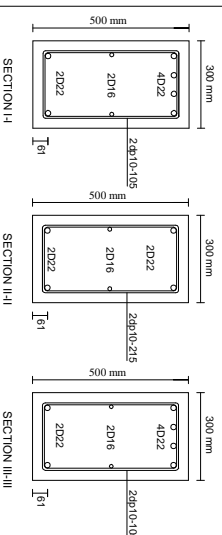
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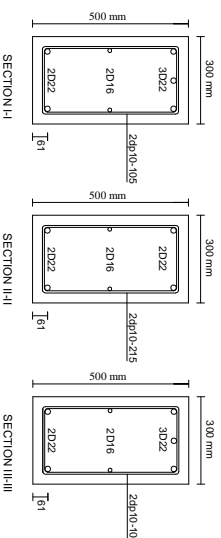
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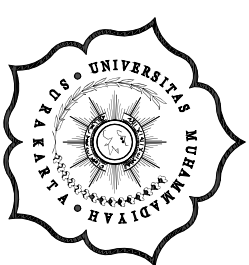
BEAM SECTION DETAIL
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SCALE 1:20



BEAM SECTION DETAIL
B-801, B-853, B-989, B-1020
SCALE 1:20



BEAM SECTION DETAIL
B-780, B-806, B-828, B-1146, B-1153, B-1174, B-1205, B-1321
SCALE 1:20



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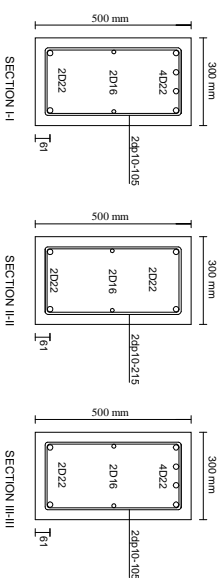
YENNY NURCHASANAH, S.T., M.T.

APPROVED

BUDI SETIAWAN, S.T., M.T.

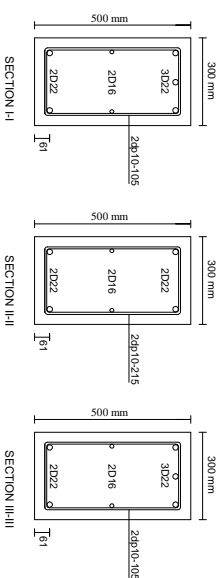
IMAGE TITLE

DETAIL BEAM AS-E



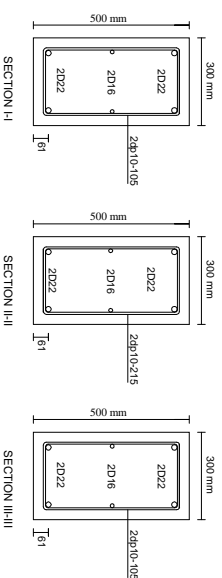
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B-224, B-380, B-384, B-397, B-398, B-400, B-402, B-408, B-565, B-579,
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SCALE 1:20



BEAM SECTION DETAIL
B-29, B-43, B-219, B-233, B-404, B-418, B-805, B-1134, B-1137, B-1138, B-1140, B-1142, B-1148, B-1346,

SCALE 1:20



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B-589, B-603, B-774, B-786, B-959, B-973, B-1144, B-1158, B-1161, B-13

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